Calendar No. 334

100TH CONGRESS *1st Session*	SENATE	REPORT 100-173

NUCLEAR PROTECTIONS AND SAFETY ACT OF 1987

REPORT

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS UNITED STATES SENATE

together with

ADDITIONAL VIEWS

TO ACCOMPANY

S. 1085

TO CREATE AN INDEPENDENT OVERSIGHT BOARD TO ENSURE THE SAFETY OF UNITED STATES GOVERNMENT NUCLEAR FACILITIES, TO APPLY THE PROVISIONS OF OSHA TO CERTAIN DEPARTMENT OF ENERGY NUCLEAR FACILITIES, TO CLARIFY THE JURISDICTION AND POWERS OF GOVERNMENT AGENCIES DEALING WITH NUCLEAR WASTES, TO ENSURE INDEPENDENT RESEARCH ON THE EFFECTS OF RADIATION ON HUMAN BEINGS, AND FOR OTHER PURPOSES

SEPTEMBER 24 (legislative day, SEPTEMBER 22), 1987.—Ordered to be printed

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NUCLEAR PROTECTIONS AND SAFETY ACT OF 1987

SEPTEMBER 24 (legislative day, SEPTEMBER 22), 1987.—Ordered to be printed

Mr. GLENN, from the Committee on Governmental Affairs, submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany S. 1085]

The Committee on Governmental Affairs, to which was referred the bill (S. 1085) to create an independent oversight board to ensure the safety of United States Government nuclear facilities, to apply the provisions of OSHA to certain Department of Energy nuclear facilities, to clarify the jurisdiction and powers of Government agencies dealing with nuclear wastes, to ensure independent research on the effects of radiation on human beings, and for other purposes having considered the same, reports favorably thereon with an amendment and recommends that the bill as amended do pass.

I. SUMMARY

Since the beginning of the nuclear age to the present, the Department of Energy (DOE) and its predecessor agencies have not been subject to outside, independent oversight of their technical operations. In the past, this was perhaps justifiable on the basis of national security concerns and unique technical expertise. In recent years, it has become increasingly evident that this situation is not justified and must be changed.

The specific problems that this legislation seeks to rectify stem from the fact that although one of the main missions of DOE is the production of nuclear materials for weapons as well as nonmilitary

purposes, DOE also has the responsibility for ensuring health and safety at its facilities without being subject to appropriate and independent outside review. Thus, DOE facilities operate without the full panoply of federal protections and independent oversight found in the commercial nuclear industry which are designed to protect workers, the public, and the environment. This situation has existed for over four decades.

The reason why DOE's nuclear facilities have escaped outside oversight is rooted in their early history dating back to World War II. The U.S. Army's Manhattan Engineer District (MED), or the "Manhattan Project," which developed the first atomic bombs, worked out of necessity in extreme wartime secrecy with the intent of carefully guarding its technological expertise. The atomic bombs that were dropped on Hiroshima and Nagasaki were laboratory-developed, custom-built, and hand-assembled in secret locations around the country, including Los Alamos, New Mexico; Oak Ridge, Tennessee; and Hanford, Washington. Even today these sites are important components of DOE's nuclear weapons research and production complex.

What in wartime had been essentially an experimental process of developing handcrafted weapons, during the 1950s became a nationally dispersed assembly-line production system as the U.S. Government developed the infrastructure for nuclear weapons development and production.

Today the DOE nuclear complex includes 127 facilities in 23 states and employs 142,067 people. The facilities range in size from a single building with one employee to giant complexes, like the Savannah River Plant in South Carolina and the Hanford Reservation in Washington state, which each have over 10,000 employees. The major facilities are concentrated in two dozen locations. The DOE nuclear complex develops, produces, and tests both weapons materials and nondefense nuclear materials, often at the same DOE nuclear sites.

Whereas at first, nuclear materials production was exclusively under military control, after World War II the atomic bomb factories and laboratories were put in civilian hands. The Atomic Energy Commission (AEC), created by the Atomic Energy Act of 1946 (AEA), was put in control of all aspects of atomic energy.

The first decade after World War II also saw the first steps toward development of the commercial nuclear industry. The Atomic Energy Act of 1954 (P.L. 83-703) required all commercial nuclear facilities to be licensed by the AEC. However, in the tense Cold War atmosphere, deep concerns about maintaining strict technological secrecy kept the DOE nuclear facilities from being subject to licensing requirements.

Twenty years later, in 1974, when the AEC's dual role as promoter and regulator of commercial nuclear power was perceived to be in conflict, Congress created the Nuclear Regulatory Commission (NRC), with responsibility for regulating commercial nuclear activities. Once again, the govenment-owned nuclear facilities did not come under increased scrutiny or independent review. No agency which was independent of the producer, either the NRC or a comparable body, was charged with oversight over the safety of the DOE nuclear facilities.

The record shows that many problems have developed during DOE's long history of self-regulation. This year alone the Committee on Govenmental Affairs has held four hearings on the issues of safety, health, and the environment at DOE nuclear facilities. At one of the Committee's hearings, on March 12, 1987, J. Dexter Peach, Assistant Comptroller General, U.S. General Accounting Office (GAO), testified:

> [The GAO's] work on safety matters at DOE facilities over the last several years . . . has identified important safety issues which, considering their scope, raise serious questions about both the safety of individual facilities and DOE operations as a whole.

Mr. Peach also said that the GAO reports that have been issues on the DOE nuclear facilities over the years—

> have described a variety of unresolved safety and environmental problems at DOE's nuclear defense facilities, but when considered together, they underlie a series of critical issue that the Congress and the Administration need to face in determining the future of the DOE nuclear weapons complex. I think it is in the collective issue that the Committee needs to begin addressing, as well as the individual problems. These issues arise from three factors. One, the facilities are old, and some are already operating beyond their expected life. Unresolved concerns exist about the operational safety of many of the facilities, and there has been a lack of attention to environmental problems created by facility operations over the years that has lead to undefined backlog of clean-up actions needed.

Because the DOE nuclear complex includes many aged facilities, the potential for additional safety problems is increased. For example, construction of the last production reactor was finished in 1963, and some DOE reactors have been operating near or beyond the limit of their expected lifetime. Other DOE facilities that handle radioactive and other hazardous materials are also badly in need of refurbishing and modernization if they are to continue to operate.

The record shows that some DOE facilities have operated with insufficient concern for public health and safety. Production has been the overriding measure of performance. An example is DOE's Feed Materials Production Center in Fernald, Ohio, a large facility that has been in operation since 1952. At Fernald a variety of low-enriched or depleted feed materials are converted into uranium metal to be used as fuel and for other purposes at other DOE facilities. In 1980 DOE stepped up production goals at Fernald, and by 1985 output at the Ohio facility had increased 288 percent over the 1979 levels. DOE made minimal capital improvements during this period. DOE did not even have an onsite manager at Fernald from about 1973 to 1985, according to testimony by Ronald W. Cochran, Deputy Assistant Secretary for Nuclear Materials, Office of Defense Programs, U.S. Department of Energy. He testified on April 22, 1985 before the Senate Governmental Affairs Subcommittee on

Energy, Nuclear Proliferation, and Government Processes as follows:

> Our [DOE's] existing contractor appraisal program was not identifying chronic or major problems to management early enough to avoid the potential for them to reach the crises stage.

This hearing revealed that DOE gave award fees to the contractor for meeting production goals despite a poor record on environmental protection and lack of an adequate program for keeping radiation exposure of workers as low as reasonably achievable.

The hearing also documented environmental abuses, including Fernald's release of 95,000 kilograms or uranium to the air and 75,000 kilograms of uranium to water during its operations. Following this hearing, Senator Glenn asked the GAO to examine environmental conditions at DOE nuclear facilities systemwide.

The resulting September 1986 GAO study revealed that serious environmental problems exist throughout the DOE nuclear complex. Soil was contaminated at six, and groundwater was contaminated at eight of the nine DOE facilities that the GAO surveyed.

On March 17, 1987, Keith O. Fultz, Associate Director, U.S. General Accounting Office, testified that a July 1986 GAO report found that at DOE's Savannah River Plant:

> The radioactive contamination in one stream was about 750 times greater than drinking water standards. They also have contaminated groundwater—some concentrations were about 116,000 time greater than drinking water standards. In addition, leaks from high-level waste storage tanks have contaminated about 30,000 square feet of soil underlying the tanks. As a result of the contamination at the facility, the possibility exists that some radioactive contamination could reach the Tuscaloosa aquifer. In addition, because of the extensive contamination, institutional controls and oversight at the facility may be needed for hundreds of years.

Fultz also testified that:

> DOE facilities in Colorado, South Carolina, and Tennessee contaminated the groundwater with solvents (cleaning agents) that are as much as 1,000 times above proposed drinking water standards. Other DOE facilities in South Carolina and Washington State contaminated the groundwater with radioactive materials that are more than 400 times greater than drinking water standards. At Mound and Fernald in Ohio, the contamination has migrated offsite into drinking water supplies—both a well and an aquifer.

Also at the Committee's March 17, 1987, hearing was the Honorable Anthony J. Celebrezze, Jr., Attorney General, State of Ohio, who testified about DOE activities at the Portsmouth Uranium Enrichment Complex near Piketon, Ohio. Attorney General Celebrezze said that:

> During a ten-year period beginning in 1974, DOE pursued a policy of disposing some of its radioactive and solvent-contaminated waste oil by spreading it on the ground and then roto-tilling it into the soil. About 50,000 gallons of waste were disposed of in this fashion.

Attorney General Celebrezze also testified about DOE's use of an old abandoned will for waste from its Fernald facility in Ohio. He stated that:

> DOE admitted that it had no evidence that it had ever plugged the well before installing the radioactive wastewater pit. Obviously, the apparent failure to seal off the well before installing a pit for the storage of radioactive water is wholly unacceptable.

The situation at Fernald with respect to worker safety and health is a stark reminder that employees at DOE nuclear facilities do not enjoy the safety and health protections afforded other American workers. Workers in DOE nuclear facilities are not covered by the Occupational Safety and Health Administration (OSHA), which since 1970 has had a mandate to protect the health and safety of all workers.

On June 17, 1986 the Governmental Affairs Subcommittee on Energy, Nuclear Proliferation, and Government Processes held a hearing on the Radiation Reorganization Act of 1985. At that hearing Robert Alvarez of the Environmental Policy Institute of Washington, D.C., testified about DOE worker populations who "are experiencing greater than expected risks of dying from malignant cancers and certain non-malignant diseases." According to Mr. Alvarez, DOE-funded studies indicated that twelve populations of DOE nuclear workers at several locations were experiencing significant health problems and that eight of the twelve populations were found to have excessive cancer death rates.

Mr. Alvarez also testified that DOE withheld a study and an analysis of the study from him and other members of a DOE advisory committee on epidemiological studies relative to the Savannah River Plant. The requested study was conducted in 1976 by E. I. DuPont De Nemours and Company and, according to Mr. Alvarez's testimony, found increased risks of lung cancer and leukemia among nuclear workers at DOE's Savannah River Plant, which is operated by DuPont. An analysis by a DOE contractor attached to the study, which the committee also sought, stated that "the arguments against this risk being occupationally related need to be expanded."

Giving an example of DOE's defensive attitude on its health and safety record, Mr. Alvarez testified that despite DOE studies which found elevated levels of leukemia and other serious illnesses among employees at the Oak Ridge National laboratory (ORNL), the Review, the official publication of ORNL editorialized:

> Our operations do not threaten the health of people; in fact epidemiological studies indicate that ORNL employees have lower death rates from many diseases, including most cancers, than does the U.S. population as a whole. In addi-

> tion statistics show that one of the safest places one can be is not at home or on trips but working at ORNL.

The discrepancies in both claims and analyses between DOE and its critics regarding health and safety issues, coupled with DOE's admittedly poor record on environmental protection, have eroded DOE's credibility on such issues over the years, particularly among the employees at the plants. This has had a corrosive impact on the workers' acceptance of research results funded by DOE, which is perceived as having a conflict because of its mission of production while at the same time being the agency which conducts or sponsors the largest portion of research into the health effects of ionizing radiation.

The Committee on Governmental Affairs held a hearing on the subject of radiation research on June 17, 1987, at which Dr. Philip Landrigan, Director, Division of Environmental and Occupational Medicine, Mount Sinai School of Medicine, New York, testified. Dr. Landrigan, who is a reviewer of DOE studies, has found the majority of these studies to be technically competent, but acknowledged:

> These studies are flawed and tainted all too often in the eyes of the public, and that tainting derives from the fact that DOE is in a dual role in sponsoring these studies. On the one hand, they are advocates for nuclear production, and on the other hand, they are attempting to protect their workers. This is a position that I think is inherently untenable.

The related serious safety, health, and environmental concerns at DOE nuclear facilities point to the need for legislative correction. For this reason, S. 1085 offers four titles which address the outstanding problems facing the Department of Energy nuclear facilities. Title I of this bill will create an independent oversight board to ensure the safe operation of Department of Energy facilities. Title II will protect workers by applying the provisions of the Occupational Safety and Health Act to employees at DOE nuclear facilities. Title III will protect the environment by clarifying the jurisdiction and powers of the Environmental Protection Agency in dealing with mixed radioactive and hazardous wastes. Title IV will protect the integrity of radiation research programs by providing independent oversight of DOE's research program on the effects of radiation on human health.

More detail and background on each of the titles follow in separate sections.

II. TITLE I: DEPARTMENT OF ENERGY NUCLEAR SAFETY BOARD OVERSIGHT ACT OF 1987

PURPOSE

The purpose of this title is to establish an independent Nuclear Safety Board to improve oversight and to promote the safety of the Department of Energy's (DOE's) nuclear facilities. The three members of the Board would be appointed by the President, with the advice and consent of the Senate, for six-year terms.

The functions of the Board would be to review and evaluate the implementation of current health and safety standards and Department of Energy Orders at DOE nuclear facilities as well as the adequacy of the standards and Orders themselves. The Board would also conduct independent investigations of accidents and other events that occur at Department of Energy nuclear facilities which the Board determines to be important because of actual or potential adverse effect on the health and safety of the public. The Board would recommend to the Department of Energy changes in operating procedures or health and safety standards to improve the safety of its facilities or reduce the radiation exposure of workers or the public and issue periodic unclassified public reports on its recommendations. The Board would also make recommendations to ensure that the standards for the design and construction of any new DOE nuclear facilities be commensurate with the standards that are imposed on comparable private-sector facilities.

Need For Legislation

The operation of nuclear reactors and other nuclear facilities entails great potential risks to the health and safety of workers and the general public. In recognition of those potential risks, Congress has long seen the need to provide independent oversight of those responsible for operating commercial nuclear facilities. However, Government-owned nuclear reactors and facilities, in contrast, have not been subject to outside independent scrutiny. The reasons for this date to the legacy of secrecy surrounding the development of the first atomic bombs.

The Atomic Energy Act of 1946 (P.L. 79–585) gave the Atomic Energy Commission authority to operate the Government's nuclear facilities, including those used in the production and use of materials for nuclear weapons.

The Atomic Energy Act of 1954 (P.L. 83–703) required all commercial nuclear facilities to be licensed by the Atomic Energy Commission (AEC). The Government's nuclear facilities were not subjected to the same or a comparable requirement. Later, when the AEC's dual role as a promoter and regulator of commercial nuclear power was perceived to be in conflict, Congress (in the Energy Reorganization Act of 1974, P.L. 93–438) created the Nuclear Regulatory Commission (NRC), with the sole responsibility for regulating commercial nuclear activities. Again, no comparable outside safety authority was put in place for Government-owned nuclear facilities. Instead, the Energy Reorganization Act of 1974 also created the Energy Research and Development Administration (ERDA), which subsequently evolved into the Department of Energy (DOE). Then and now DOE has assumed the dual responsibility for nuclear production and safety.

Although the licensing requirements set up in the 1954 Atomic Energy Act did not extend to Government-owned facilities, that Act established an independent 15-member panel of experts, the Advisory Committee on Reactor Safeguards (ACRS), to review safety studies, make reports, and advise the AEC with regard to the hazards of existing or proposed nuclear facilities and the adequacy of proposed reactor safety standards.

Before passage of the Energy Reorganization Act of 1974, ACRS provided an important measure of independent expertise of the Government's as well as commercial nuclear activities. It participated in reviews of many AEC facilities, including performing periodic safety reviews of the N-reactor at Hanford and the Savannah River production reactors, and provided comments on safety standards and other generic safety matters. However, with the passage of the Energy Reorganization Act of 1974, the ACRS function was transferred to the Nuclear Regulatory Commission to focus on commercial nuclear activities, leaving the Energy Research and Development Administration (ERDA, now DOE), without independent safety advice. A Memorandum of Understanding (MOU) between DOE and NRC established procedures for DOE to request ACRS reviews of its nuclear facilities. This MOU has been used to request reviews of a number of DOE's nuclear research facilities, including the now defunct Clinch River Breeder Reactor.

Since 1974 the Department of Energy has been without any regular outside expert review of the safety of its nuclear facilities, nor does it have independent outside oversight. Throughout most of that period, the responsibility for the safety of DOE nuclear facilities resided in DOE's programmatic offices, which had an interest in the uninterrupted operation of the facilities to meet mission objectives. The situation was improved in September 1985, when a new Assistant Secretary for Environment, Safety, and Health, reporting directly to the Under Secretary of Energy, was given lead responsibility for DOE headquarters safely activities, including review of DOE field operations. That step raised safety to a more equal footing with operations in the DOE organizational structure. Improvements in DOE's internal safety, health, and environment structure are, of course, encouraged. However, the Committee believes that in order to assure that safety will not play a secondary role to operations within DOE, it is necessary that oversight of safety activities be accomplished on a continuous basis by a group completely independent of the Department.

Independent oversight had been suggested in 1981 by the Crawford Committee, which was established by the Under Secretary of DOE to assess the Department's response to the accident at Three Mile Island. In addition to recommending that DOE's operational and safety functions be organizationally separate, the Crawford Committee recommended that:

> A Nuclear Safety Advisory Committee made up of non-DOE employees should be established and report to the Secretary. This committee should periodically evaluate the performance of DOE's independent overview and programmatic safety functions and advise the Secretary of Energy on its findings.

Outside assessments of the safety of DOE facilities have revealed troubling facts and bolstered the argument for independent outside oversight of DOE nuclear facilities. A series of GAO investigations detail serious deficiencies in the areas of nuclear safety and environmental protection at nearly all the DOE nuclear facilities surveyed.

For example, a June 16, 1986, GAO report, "Nuclear Safety: Safety Analysis Reviews for DOE's Defense Facilities Can Be Improved", found that safety analysis reports for a number of DOE's nuclear reactors had not been completed or were inadequate. The safety analysis reviews are the basic tool used to determine whether a nuclear facility can operate safely and without posing an unacceptable risk to the public. Three of eight facilities that the GAO examined did not have approved safety analysis reviews. The report stated:

> These three were the plutonium fabrication facility at Rocky Flats, Colorado; the fuel fabrication facility at Savannah River, South Carolina; and the reprocessing facility at Savannah River, South Carolina. All three facilities have been designated high-hazard facilities by DOE, which means they have the potential for significant on-site or off-site releases of radioactive material in a major accident.

This report further stated:

> Although DOE's recent initiatives have the potential for improving safety oversight of DOE, this oversight remains an internal function within DOE. Thus, programmatic objectives and safety considerations will continue to be assessed internally within DOE. Trade-offs between the two, undoubtedly, will have to be made during the budget process. Further, DOE will remain open to criticism in regulating itself in regard to the safety aspects of its operations.

The GAO report called for outside, independent reviews of DOE's safety analysis reviews. The report stated:

> DOE Orders require that independent reviews of safety analysis reviews be performed but allow DOE field offices to carry out ths function. While DOE headquarters staff and DOE contractors have assisted in the review process, the preocess remains an internal DOE function carried out primarily by DOE field offices. * * * It is our view that DOE should make appropriate arrangements to have an outside independent organization review its safety analysis reviews. Among other things, it would help prevent safety concerns from conflicting with programmatic interest such as production goals.

In another investigation performed at this Committee's request, the GAO found that for nearly seven years, from 1979 to 1986, DOE had been operating four nuclear reactors at the Savannah River Plant at a power level substantially higher than what the emergency core cooling system could handle in an accident. A preliminary laboratory report from DuPont, the DOE contractor at Savannah River, indicated that "the model used to calculate the power limits had a number of limitations," according to testimony before this Committee on March 12, 1987, by Keith O. Fultz, Associate Director, U.S. General Accounting Office. In an attempt to correct the situation, DOE reduced the power level by 20 percent in November 1986 and another 6 percent in December 1986, but it did not make its finding public.

Mr. Fultz also testified that a DuPont reactor safety evaluation committee at Savannah River concluded:

> No effective management system exists to ensure timely clearance of action items related to reactor operations. Its [the committee's] June 1986 report points out that the backlog of recommended actions for the reactor incident report system is large and growing. As of the end of 1985, 198 recommendations, some dating back to the late 1970s, were still outstanding. In addition, in a November 1986 letter the reactor safety advisory committee stated their concern about the backlog of reactor incident report recommendations, and I think this is a very important quote. They believe that the backlog may indicate a trend toward a gradual deterioration of safety at Savannah River operations.

Mr. Fultz also testified:

> We are concerned that inexperienced personnel are maintaining the reactors without adequate training and, in some cases, without proper written procedures. Just summarizing, we are concerned that management inattention contributed to the operations and maintenance programs.

Other outside assessments of safety at DOE nuclear facilities also present a disturbing picture of unsafe and potentially dangerous conditions. In 1986 DOE Secretary Herrington appointed six independent consultants, who comprised "the Roddis panel", to report to the operations of the N-reactor at Hanford, Washington. The N-reactor is the U.S. reactor most similar in design to the Soviet Union's Chernobyl reactor. Both are graphite core reactors, and both lack the reinforced steel containment dome found on most commercial reactors. Each consultant was asked to submit an individual report (all six reports are available from the Committee). In giving his individual report, Louis H. Roddis, Jr., stated:

> I recommend that the Department shut down the N-reactor unless a positive judgment is made that the requirements for defense material warrants accepting public hazards exceeding those of commercial reactors.

In a separate study, DOE asked the National Academy of Sciences (NAS) to review the safety of DOE's largest nuclear reactors in light of the Chernobyl accident. In the course of conducting its review, the National Academy found that the margin of safety provided by the emergency core cooling system for the Savannah River production reactors was so uncertain that on Mach 9, 1987, NAS strongly advised DOE to further reduce the power levels beyond the 26 percent reductions that DOE had already made by December 1986. The National Academy believed that the problem was serious enough that its information and recommendation should not be delayed until the release of its formal report. The NAS letter stated:

> We are not able to conclude with confidence that significant core damage would be avoided if there were a severe

> loss of coolant accident while the reactors are operating at the currently established reduced power limits. In our view, the reactors should only be operated at power levels at which it can be convincingly demonstrated that there will be adequate cooling of the fuel over the entire duration of the transient.

However, DOE did not make public the National Academy recommendation, even though the Department testified before this Committee on March 12 and 17, 1987, at two hearings on DOE nuclear facilities, one of which specifically addressed reactor safety. Nor did DOE reduce the power levels of the reactors until after this Committee independently became aware of the situation. Only then did DOE reduce the power levels of the Savannah River production facilities to its current level of 50 percent capacity.

The fact that independent reviews of DOE's reactor operation confirm or uncover serious safety problems is another strong indication of the need to institutionalize independent oversight of DOE nuclear facilities.

The Governmental Affairs Committee held hearings in March and June, 1987, at which several witnesses testified to the need for independent, outside oversight of DOE nuclear facilities. Louis H. Roddis, Jr., who headed the panel appointed by DOE Secretary Herrington to review the safety of DOE's troubled N-reactor in Hanford, Washington, stated:

> There is a need for a credible permanent outside review of the DOE activities in the nuclear safety area. Both the independent consultants group review of the N-reactor and the NAS [National Academy of Sciences] review committee are ad hoc in nature, and while I believe them to be credible in themselves, there is no question in my mind but that a permanent overview body should be established.

In addition, J. Dexter Peach, Assistant Comptroller General, U.S. General Accounting Office, testifying at this Committee's hearing on June 16, 1987 on the need for outside, independent oversight of DOE, stated:

> We have had a long history at GAO of supporting the need for independent oversight of various aspects of DOE's nuclear facilities.

Peach also stated:

> We believe that any oversight approach, to be effective, should have five key elements: independence, technical expertise, ability to perform reviews of DOE facilities as needed, clear authority to require DOE to address the organization's findings and recommendations, and a system to provide public access to the organization's findings and recommendations. The legislation you [Senator Glenn] have submitted creating a Nuclear Safety Board does address each of these elements and has, therefore, the potential to be an effective mechanism for oversight of DOE's nuclear facilities.

Based on this record, the DOE itself has come to recognize the need for independent, outside oversight. At a hearing held by this Committee on June 17, 1987, DOE Under Secretary Joseph F. Salgado testified:

> * * * we may differ in our approach, but the fundamental philosophy of your bill, the fundamental approach of your bill, its findings and its purpose we are in agreement with and look forward to working with you to solve and reestablish the credibility of our Department.

Under Secretary Salgado also testified:

> [DOE's] Secretary Herrington endorses the establishment of an independent body outside of the Department that would oversee the safety of these nuclear facilities, and has stated so publicly.

However, since providing that testimony, DOE has circulated draft legislation calling for a safety board that would be advisory only, with the Secretary of Energy making the final determination on board recommendations. However, the Committee has determined that keeping safety solely in the hands of those whose primary responsibility is production constitutes, at a minimum, a potential conflict of interest. The independence of a statutory safety board that is more than simply advisory is essential to assure safety at DOE nuclear facilities.

Legislative History

The impetus for Title I grew from an investigation by the minority staff of the Subcommittee on Energy, Nuclear Proliferation, and Government Processes during the 99th Congress, which revealed a series of mishaps resulting in releases. At the request of Senator John Glenn, the Subcommittee held a hearing in Cincinnati on April 22, 1985 on the Department of Energy (DOE's) Feed Materials Production Center at Fernald, Ohio. Witnesses at the hearing testified that the emphasis at Fernald was on production, with far less emphasis on safety or environmental protection. The contractor operating the plant continued to receive large award fees from DOE based upon meeting production goals, despite serious performance deficiencies in the areas of environmental protection and radiation exposure.

Those findings prompted Senator Glenn to request the General Accounting Office (GAO) to perform a number of investigations of DOE facilities and safety procedures in Ohio and other areas of the United States. In all, twenty-one GAO reports [1] requested by Sena-

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[1] *Nuclear Waste: Unresolved Issues Concerning Hanford's Waste Management Practices* (GAO/RCED 87-30; Nov. 1986)

Nuclear Energy: Environmental Issues at DOE's Nuclear Defense Facilities (GAO/RCED 86-192; Sept. 1986)

Nuclear Safety: Comparison of DOE's Hanford N-Reactor With the Chernobyl Reactor (GAO/RCED 86-213BR; Aug. 1986)

Nuclear Waste: Impact of Savannah River Plant's Radioactive Waste Management Practices (GAO/RCED 86-143; July 1986)

Nuclear Energy: A Compendium of Relevant GAO Products on Regulation, Health, and Safety (GAO/RCED 86-132; June 1986)

Continued

tor Glenn and other members of Congress on safety, health, and environmental issues at DOE facilities cumulatively demonstrate the need for independent oversight of DOE nuclear operations.

In the 100th Congress, the Governmental Affairs Committee held a hearing on March 12, 1987 devoted specifically to reactor safety issues at Department of Energy facilities and another hearing on March 17, 1987 on environmental problems at these DOE facilities. Chairman Glenn introduced the Nuclear Protections and Safety Act of 1987 (S. 1085) on April 23, 1987, Title I of which establishes the independent Nuclear Safety Board that is now being reported. The Committee held legislative hearings on S. 1085 on June 16 and 17, 1987.

III. TITLE II: APPLICATION OF OSHA AND NIOSH TO DOE NUCLEAR FACILITIES

Purpose

The purpose of Title II is to provide for oversight by the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) over Department of Energy (DOE) nuclear facilities. It would establish that OSHA and NIOSH conduct health, safety, and hazard assessment of DOE nuclear facilities throught the elimination of DOE's exemption from the Occupational Safety and Health Act of 1970. All existing occupational safety and health standards in effect in DOE facilities would be maintained until the Secretary of Labor provides superseding standards. The DOE nuclear facilities covered by this legislation will be inspected at least once a year. Title II is also intended to assure adequate enforcement of health and safety standards at DOE nuclear facilities.

Nuclear Safety: Safety Analysis Reviews for DOE's Defense Facilities Can be Improved (GAO/RCED 86-175; June 1986)

Environment, Safety, and Health: Status of Department of Energy's Implementation of 1985 Initiatives (GAO/RCED 86-68FS; Mar. 1986)

Nuclear Waste: Department of Energy's Transuranic Waste Disposal Plan Needs Revision (GAO/RCED 86-90; Mar. 1986)

Environment, Safety, and Health: Environment and Workers Could Be Better Protected at Ohio Defense Plants (GAO/RCED 86-61; Dec. 1985)

Environment, Safety, and Health: Information on Three Ohio Defense Facilities (GAO/RCED 86-51FS; Nov. 1985)

DOE's Plutonium Facility (GAO/RCED 85-3; Sept. 1985)

Department of Energy Acting To Control Hazardous Waste At Its Savannah River Nuclear Facilities (GAO/RCED 85-23; Nov. 1984)

DOE's Safety and Health Oversight Program At Nuclear Facilities Could be Strengthened (GAO/RCED 84-50; Nov. 1983)

Decommissioning Retired Nuclear Reactors At Hanford Reservation (GAO/RCED 83-104; Apr. 1983)

Cleaning Up Nuclear Facilities—An Aggressive and Unified Federal Program Is Needed (GAO/EMD 82-40; May 1982)

GAO's Response to DOE on EMD-81-108, "Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities" (EMD 82-36; Jan. 1982)

Congress Should Increase Financial Protection to the Public From Accidents at DOE Nuclear Operations (EMD 81-111; Sept. 1981)

Better Oversight Needed For Safety and Health Activities At DOE's Nuclear Facilities (EMD 81-108; Aug. 1981)

GAO's Analysis of Alleged Health and Safety Violations at the Navy's Power Training Unit at Windsor, Connecticut (EMD 81-19; Nov. 1980)

Department of Energy's Safety and Health Program For Enrichment Plant Workers Is Not Adequately Implemented (EMD 80-78; July 1980)

Decommissioning Hanford Reactor (EMD 79-20; Jan. 1979)

NEED FOR LEGISLATION

This title of the legislation grew out of long-term concerns about the safety and health of workers in the DOE defense facilities. On July 21, 1980 the Subcommittee on Energy, Nuclear Proliferation, and Federal Services held a hearing on DOE's occupational safety and health program as it applied to workers at the Portsmouth nuclear enrichment facility in Ohio. Following the hearing, at the request of Senator Glenn, then Chairman of the Subcommittee, the General Accounting Office (GAO) conducted an investigation into the adequacy of DOE's producers for ensuring that its health and safety standards were being met. GAO concluded that DOE was not adequately monitoring and enforcing its health and safety standards for workers at the facilities it examined. DOE's three-tiered system of checks—inspections, appraisals, and complaint investigations—was effective in assuring compliance with DOE health and safety regulations.

The GAO found:

> In not conducting inspections, 'DOE cannot maintain awareness of potential hazards and take prompt action to eliminate or mitigate the risk of accident. The March 7, 1978, release of more than 10 tons of liquid uranium hexafluoride from a ruptured storage cylinder at the Portsmouth plant may have been avoided had DOE's Oak Ridge Operations Office conducted onsite inspections and discussed safety and health concerns with employees. * * * DOE's subsequent investigation of the accident revealed that dropped storage cylinders occur so frequently that they are not even reported unless damage results.

In addition, the GAO reported:

> Appraisals are conducted too infrequently and do not provide adequate coverage to fill the void created by the lack of inspections.

The GAO report described the situation that it found and recommended:

> If DOE's program is to meet its objective of ensuring the safety and health of all employees, it is imperative that employees be offered objective, independent reviews of their complaints and that the complaints not be recycled to the contractor which may be responsible for the situations giving rise to the complaints.

The GAO found:

> The present structure and operation of the Operations Office combines production with safety and health to interface with the contractor as one entity. While conscious trade-offs of safety and health concerns for production goals have not been detected, the oneness of the organization, at a minimum, detracts from the status and perceived authority of the safety and health program. The closeness of the safety and health program to all phases of contractor relations may have also led to situations where DOE

> relies on the contractor to carry out DOE's safety and health program without adequate DOE monitoring or oversight.

Since that hearing, an already hazardous situation at the DOE plants was exacerbated by the large increase in nuclear weapons production. Between 1979 and 1985 the production of nuclear weapons materials doubled, but relatively little money was spent to improve safety or modernize the facilities.

J. Dexter Peach, Assistant Comptroller General, U.S. General Accounting Office, testified about this at the Committee's hearing on March 12, 1987:

> * * * the Fernald plant in Ohio demonstrates this problem. During the 1970s DOE considered closing this plant. As a result, it did not make capital improvements, and equipment became obsolete. In the 1980s production goals increased, putting a strain on the plant's resources. According to DOE's own documents, Fernald management emphasized production over worker safety and health concerns.

The workplace hazards in DOE defense facilities are diverse. In addition to the risks of working closely with radioactive materials, workers at these DOE facilities are exposed to a wide range of other toxic and hazardous substances, exposure to which in comparable workplaces is carefully regulated by OSHA.

The extent of these dangers was emphasized at the Committee's June 17, 1987, hearing by witnesses who represent employees at many of the DOE defense facilities: Joseph Misbrener, President, Oil, Chemical, and Atomic Workers International Union, testifying on behalf of the AFL-CIO and the AFL-CIO's Industrial Union Department; James Kelly, President, Local 8031, United Steelworkers of America; and A. L. O'Connor, President, District 34, International Association of Machinists. Their testimony was replete with examples of DOE's failure to adequately address problems of safety and health at the facilities. Moreover, as these witnesses explained, the problems are recurring.

At present, DOE has the statutory authority for the occupational safety and health of contractor employees at Government-owned, contractor-operated (GOCO) facilities. These contractors are required to comply with applicable OSHA standards that DOE has elected to adopt. This is very different from requiring DOE to meet all OSHA standards—with inspection by OSHA and enforcement by OSHA. The Committee believes that there is no justification for continuing DOE exemptions to federal laws regulating health and safety.

This title would also give the National Institute for Occupational Safety and Health (NIOSH) access to DOE defense facilities to do on-the-spot health hazard evaluations. Although NIOSH is mandated to conduct epidemiological field research in general industry through OSHA, it needs the cooperation and assent of DOE for right-of-entry into DOE defense facilities. Requests for NIOSH assistance to evaluate potential problems can come from an agency,

from employees or their representatives, or as an agency/employee joint request.

NIOSH's lack of access to the DOE defense facilities has long been a problem, as witnesses testified at the June 17, 1987, Governmental Affairs Committee hearing and earlier at the April 22, 1985, hearing that the Subcommittee on Energy, Nuclear Proliferation, and Government Processes held on the Management and Operation of the U.S. Department of Energy's Fernald, Ohio, Feed Materials Production Center. At the 1985 hearing Dr. Philip Bierbaum, Deputy Director of NIOSH's Division of Surveillance, Hazardous Evaluations, and Field Studies, testified that DOE repeatedly delayed NIOSH access to DOE defense facilities at which NIOSH was conducting studies.

> I would say that our ability to do these studies both at Piketon * * * and Fernald, probably took longer than it should have for us to have the actual entry into the facility and have access to the necessary data.

At the June 17, 1987, hearing the testimony of A. L. O'Connor for the International Association of Machinists reflected the frustration of efforts to secure NIOSH investigations to little avail.

S. 1085 would bring both OSHA and NIOSH into DOE defense facilities. The Committee believes that worker health and safety in DOE facilities could be rendered substantially safer by applying standards developed by experts in the field of occupational health and safety. The Secretary of Labor has a long-standing responsibility for the health and safety of all workers in this Nation's industries. This includes the enforcement of occupational health and safety standards and other protective labor standard programs. Further, the Secretary of Health and Human Services (HHS) has a continuing responsibility for evaluating health effects and needs related to radioactive and toxic substances and could provide substantial assistance in creating and enforcing standards appropriate to DOE nuclear facilities.

DOE, with its clearly vested interest in the production of nuclear weapons and nuclear-powered energy facilities, should be relieved of sole responsibility for the health and safety of its workers in favor of the Federal governing agency (OSHA) whose charter, as mandated by the Congress, is to protect the health and safety of all workers. As further justification for Title II, twenty-one General Accounting Office (GAO) reports (previously cited) on safety, health, and environmental practices in DOE nuclear facilities detail instances of DOE neglect of safety and environmental protection in nearly all sites surveyed.

Some of DOE's facilities have been found to have released large amounts of radioactive material into the environment to the peril of workers and the public at large. Finally, it has been revealed that there is widespread distrust among DOE workers concerning health, safety, and environmental policy in nuclear facilities. Joseph Misbrener, President of the Oil, Chemical, and Atomic Workers International Union, testified at this Committee's June 17, 1987, hearing that:

> There is a lack of confidence by the workers that DOE even cares about them. In our judgment, it is an affirmation of our longstanding belief that you cannot put the enforcement power in the hands of the agency whose lifeblood is in the service performed by the contractors in the DOE production facilities.

Dr. Philip Landrigan, Director of the Division of Occupational and Environmental Medicine at Mount Sinai School of Medicine in New York, previously headed the Division of Surveillance, Hazard Evaluations and Field Studies at NIOSH, where he had experience with NIOSH investigations at DOE facilities. He testified at the Committee's June 17, 1987 hearing on S. 1085 and states:

> The clear lesson to be learned * * * is that the present legislative and administrative arrangement whereby DOE facilities are granted an exception from the OSHA Act is ill advised. It should not be allowed to continue. Because of this arrangement, the procedures and the roles which have been developed at NIOSH and at OSHA do not necessarily apply with equal force to DOE facilities. As a result, workers in those facilities have less protection from occupational exposures in the private sector. In essence, these workers do not enjoy equal protection under the law.

Legislative History

On July 21, 1980 Senator Glenn, as Chairman of the Subcommittee on Energy, Nuclear Proliferation, and Federal Services, held a hearing on DOE's occupational safety and health program as it applied to workers at the Portsmouth nuclear enrichment facility in Ohio.

At the chairman's request, the GAO conducted an investigation into the adequacy of DOE's procedures for ensuring that its health and safety standards were being met. GAO concluded in its July 1980 reports, which was submitted as part of the hearing record, that DOE was not adquately monitoring and enforcing its health and safety standards for workers at the facilities it examined.

The Governmental Affairs Committee heard testimony at its hearing on June 17, 1987 from a number of witnesses as to the need for worker protection in DOE nuclear facilities.

On March 17, 1987 Keith O. Fultz, Associate Director, U.S. General Accounting Office, testified that groundwater and soil contamination were among the most significant environmental problems at DOE nuclear facilities. He also testified:

> With regard to the Resource Conservation and Recovery Act, we found that none of the nine facilities had received a final permit. Now, as you know, this Act is designed to prevent groundwater contamination, and until the facilities receive permits, they continue to dispose of waste in a manner that may be contaminating groundwater.

GAO also found that contaminated soil from DOE nuclear facilities has migrated off-site at several locations, including the Y-12 plant in Oak Ridge, Tennessee; Mound and Fernald in Ohio; and

Rocky Flats in Colorado. Referring to the off-site soil contamination from the Oak Ridge facility, Fultz testified:

> The Y-12 plant poses a significant public health threat. Mercury from the plant's operations contaminated a stream bed and a flood plan. In some locations, the contamination is greater than 2,000 times background levels and over 150 times greater than the state's public health guidelines.

Fultz also said:

> We found that DOE's Hanford, Washington, facility discharged liquid waste directly into the soil, although federal and state regulators would not allow private entities to do this without protective liners and proper monitoring. For example, in 1985, Handford disposed of over 25 million gallons of contaminated (both radioactive and hazardous) waste to an unlined disposal site and did not meet groundwater monitoring requirements for the site.

IV. TITLE III: MIXED HAZARDOUS WASTE AMENDMENT ACT OF 1987

Purpose

The purpose of Title III is to clarify the applicability of the Resource Conservation and Recovery Act (RCRA) to hazardous waste at Department of Energy (DOE) facilities. Specifically, it confirms Congress' intent that RCRA applies to the hazardous waste component of a mixture or a combination of a hazardous waste regulated under RCRA and radioactive material subject to the Atomic Energy Act (AEA).

The provisions of Title III are intended to apply only to DOE facilities, not to the commercial nuclear industry or nuclear waste repositories, which are regulated by the Nuclear Regulatory Commission (NRC).

Need for Legislation

Serious environmental problems exists throughout the DOE nuclear complex. Soil was contaminated at six and groundwater contaminated at eight of the nine DOE facilities that the General Accounting Office (GAO) surveyed nationwide for its September 1986 report on environmental issues at DOE nuclear defense facilities.

Title III focuses on RCRA's authority in regard to DOE's nuclear facilities. Before the passage of RCRA in 1976, DOE and its predecessor agencies was not subject to outside regulation of its solid hazardous waste. RCRA established federal and state regulation of solid and hazardous waste management, and section 6001 of RCRA explicitly subjects all federal facilities and their activities to state and federal regulations under RCRA.

However, DOE at first resisted application of RCRA to its weapons programs facilities. DOE pointed to Section 1006(a) of RCRA, which relieves facilities operating under the authority and control of the Atomic Energy Act (AEA) from compliance with RCRA when it can be demonstrated that RCRA regulations would be in-

consistent with the requirements mandated by the AEA. In addition, Section 1004(27) of RCRA exempts special nuclear or by-product material, as defined by the Atomic Energy Act of 1954, from the definition of solid waste.

In the case of the Y-12 plant at Oak Ridge, Tennessee, for example, where the accumulations of mercury and other hazardous materials were a serious threat to public health and safety, DOE argued that the Atomic Energy Act precluded any Environmental Protection Agency (EPA) or State regulation of hazardous or mixed waste under RCRA.

Only after a Federal court found that RCRA applied to hazardous waste disposal at the Y-12 plant and ordered DOE to file RCRA permits did DOE agree that its hazardous waste was subject to RCRA. *LEAF* v. *Hodel*, 586 F. Supp. 1163 (E.D. Tenn., 1984). But mixed waste, that is, hazardous waste mixed with radioactive waste, was another matter.

Despite the *LEAF* decision, DOE continued to insist that mixed waste (containing radioactive "byproduct" material) was wholly exempt from RCEA regulation. In November 1985 DOE proposed a formal rule which sought to make a patently unworkable distinction between "direct process" byproduct material and "indirect process" byproduct material, claiming the first to be exempt from RCRA. This proposal elicited sharp criticism from states, environmental organizations, and members of Congress.

On May 1, 1987, more than ten years after RCRA required all Federal agencies to comply with its requirements in the disposal of hazardous waste, DOE issued a final interpretive rule that acknowledged the role of EPA and RCRA in regulating the hazardous contents of mixed radioactive and hazardous waste. The rule declared that the "byproduct material" (or source or special nuclear material) exempted from the definition of solid waste in RCRA consists only of the radioactive material itself. If it is combined with material that is nonradioactive but hazardous under RCRA, then disposal of the hazardous waste component must also be subject to RCRA's rules.

In testimony before the Committee on June 17, 1987, DOE Under Secretary Joseph F. Salgado indicated that in light of DOE's May 1 final interpretive rule, Title III was not necessary since the "interpretive definition" of byproduct material achieved the purpose of subjecting mixed waste to RCRA as well as the Atomic Energy Act.

However, in light of the history of recalcitrance and delay in DOE's acknowledgement that RCRA applies to the hazardous waste component of a mixture consisting of a hazardous waste and a radioactive material, the Committee believes that DOE's May 1 rule should be statutorily mandated. This will prevent reversal of agency policy on this important subject now and in the future.

Legislative History

On April 4, 1985, in the 99th Congress, Senator Glenn introduced S. 892, a bill to amend the Solid Waste Disposal Act to clarify the jurisdiction of the Environmental Protection Agency over the regulation of solid waste mixed with radioactive waste at Department of Energy Atomic Energy Act facilities. The bill was referred to the

Committee on Environment and Public Works. The Subcommittee on Nuclear Regulation held a hearing on March 25, 1986, at which Senator Glenn testified.

In the 100th Congress, the Governmental Affairs Committee held a hearing on March 17, 1987 on environmental problems in DOE nuclear facilities. It heard additional testimony on this title of the legislation at a hearing on June 16, 1987.

V. TITLE IV: RADIATION STUDY ADVISORY BOARD ACT OF 1987

Purpose

The purpose of Title IV is to create a Radiation Study Advisory Board. The Board would advise and assist the Secretary of Energy in conducting studies of the effects of radiation. The Board would consist of eight members appointed by the Secretary of Health and Human Services (HHS), one member appointed by the Secretary of Energy, and two members appointed by the Secretary of Labor. The Secretary of HHS would appoint members who are expert in the health effects of radiation, epidemiology, or toxicology, as well as public health officials concerned with such health effects. Prior to the authorization or expenditure of funds, the Board would review all proposals for studies of the health effects of radiation which would be funded in an amount of $250,000 or more. The Board can recommend modifications to the proposals or recommend that the proposals not be funded. The Board would also annually review the studies on the health effects of radiation conducted by the Department of Energy. The Secretary of HHS would provide funds, facilities, and staff necessary for the Board. The Board would provide guidance to the Secretary of Energy as to the scope and direction of future studies needed.

The Secretary of Energy, with the assistance of the Board, must insure that all studies performed under Title IV are subject to peer review. To assist this process, the Secretary must promulgate guidelines to assist in the provision of data from such studies to qualified researchers not associated with DOE. The Department of Energy would be required to periodically report to the Congress concerning its implementation of the Board's recommendations.

Need for Legislation

Numerous studies have been conducted since World War II on the health effects of radiation. According to the June 1979, Presidentially mandated "Report of the Interagency Task Force on the Health Effects on Ionizing Radiation," the health effects of radiation—

> may be divided into four types: (1) acute somatic effects, (2) developmental effects, (3) genetic effects, and (4) late somatic effects. Acute somatic effects are various forms of illness that occur in individuals within days or weeks of their exposure to penetrating radiation. They usually result from single whole body doses of over 100 rem; single whole body doses of 500 rem or more are often fatal in the absence of medical support. Bone marrow cells and the

> cells lining the intestinal tract are particularly vulnerable to such large doses of radiation. As a result, acute somatic effects include anemia, hemorrhage, and infection on the one hand and nausea and diarrhea on the other. * * * Late somatic effects are effects that may become clinically evident many years after an individual has been exposed to radiation. The major and most conclusively demonstrated late somatic effects are various forms of cancer, which have been shown to be associated with radiation exposure in numerous studies. Some forms of cancer, notably leukemia and thyroid, breast and lung cancer, have been linked firmly to radiation, while the association is more problematic for others.

Research shows that workers at DOE's nuclear facilities have suffered the effects of radiation. At a Subcommittee on Energy, Nuclear Proliferation, and Government Processes hearing on June 17, 1986, Robert Alvarez of the Environmental Policy Institute of Washington, D.C., testified on DOE worker populations who "are experiencing greater than expected risks of dying from malignant cancers and certain non-malignant diseases." According to Mr. Alvarez, DOE-funded studies indicated that twelve populations of DOE nuclear workers at several locations were experiencing significant health problems and that eight of the twelve populations were found to have excessive cancer death rates.

DOE conducts or sponsors the largest portion of the research into the health effects of ionizing radiation. The implications of this fact has led to controversy.

According to the Interagency Task Force's 1979 Report:

> Some members of the public perceive a conflict between DOE's role as the primary sponsor of research into the biological effects of ionizing radiation and its roles as a developer and promoter of nuclear energy and as an employer, through contractors, of workers exposed to radiation during the production of nuclear weapons. Recently, controversy has arisen over these multiple roles, and these critics have questioned DOE's objectivity, suggesting that the major responsibility for research on health effects should be transferred from DOE to HEW [Department of Health, Education, and Welfare, now Health and Human Services]. These suggestions are based on the assertion that the credibility of the Government's research efforts would be improved by separating primary responsibility for research on health effects from the agency responsible for developing nuclear energy and technologies and assigning it to an agency whose mission is the protection of public health. By contrast, others have questioned the wisdom of such a transfer, asserting that on-going programs should not be disrupted.

In the 100th Congress, the Committee on Governmental Affairs, held a hearing on June 17, 1987, at which Dr. Philip Landrigan, Director, Division of Environmental and Occupational Medicine,

Mount Sinai School of Medicine, New York, testified. Dr. Landrigan stated:

> DOE has been undertaking epidemiologic studies for a number of years, some by contractors and consultants, such as Dr. Mancuso at Pittsburgh, some in-house, such as the studies that they have undertaken at Hanford. There have been serious concerns raised in the past about the oversight of these contracts.

Dr. Landrigan, who as a reviewer of DOE studies, has found the majority of these studies to be technically competent, acknowledged:

> These studies are flawed and tainted all too often in the eyes of the public, and that tainting derives from the fact that DOE is in a dual role in sponsoring these studies. On the one hand, they are advocates for nuclear production and on the other hand they are attempting to protect their workers. This is a position that I think is inherently untenable. In fact, I went so far in my testimony to suggest that it would actually be to the benefit of DOE and to their scientists to be removed from that position of an inherent conflict of interest and to be put into a situation where their credibility would be safeguarded by an independent advisory board.

Dr. Landrigan supports S. 1085 and in particular Title IV. At the June 17, 1987, hearing he stated:

> With regard to Title IV, the Radiation Study Advisory Board, I think that this, too, is a very necessary provision.

In the 99th Congress, Dr. Alvin W. Trivelpiece, Director of DOE's Office of Energy Research, testified before the Subcommittee on Energy, Nuclear Proliferation, and Government Processes on June 17, 1986 on the Radiation Reorganization Act of 1985. Dr. Trivelpiece defended DOE's health research role, stating:

> The issue of DOE's role in funding radioepidemiologic research of the Department's workers is confounded somewhat by a misunderstanding of the respective roles of the Office of Energy Research, which I head, and DOE's Office of the Assistant Secretary for Environment, Safety and Health. My Office is not responsible for the operation of nuclear materials facilities, nor for the health and safety of employees in those facilities, nor for the standards which govern occupational exposures in those facilities. We are the research arm of the Department.

Dr. Trivelpiece conceded, however, that some had serious reservations about DOE health studies. He stated:

> There is a concern that perhaps these studies aren't as objective as they should be within the Department. So I would be willing, in terms of the Federal Advisory Committee Act, to try to put together an appropriate outside body to review what we are doing and to determine whether or not what we are doing is independent, free, and un-

> fettered scientific inquiry on cause-and-effect relationships between radiation, cancer and other diseases.

In the 100th Congress DOE Undersecretary Joseph F. Salgado went further. At the Governmental Affairs Committee's hearing on June 17, 1987, the Under Secretary testified:

> DOE believes that its radiation epidemiology studies have been and continue to be carried out in a scientifically sound and objective manner with adequate outside peer review. However, if public confidence in these studies could be improved by an independent advisory panel, DOE has no objections.

Because DOE studies the health impact of its own production of nuclear materials and weapons, DOE has dual responsibilities that have created public concern as to the integrity and value of the health effects studies conducted by DOE. The Committee believes that even the appearance of a conflict of interest in the Department of Energy needs to be addressed.

The Committee also believes that there is a need for public health authorities to be able to direct research efforts on the health effects of radiation so that effective means of protecting the public and workers against radiation can be developed and implemented. Also, the Committee has determined that despite years of study about the health effects of radiation exposure from a number of sources, such as nuclear weapons manufacture, nuclear reactors, and radioactive wastes, many health issues remain unresolved. The mechanisms of the causation of disease from an epidemiological, Toxicological, and clinical perspective need to be further examined and better understood. Title IV of this legislation intends to correct these situations.

Legislative History

Title IV of S. 1085 refines the concepts of three bills considered in previous Congresses: S. 1938 from the 96th Congress, S. 2284 from the 98th Congress, and S. 525 from the 99th Congress.

S. 1938, the Fedeal Radiation Protection Management Act of 1979, was introduced by Senator Glenn on October 24, 1979. Its primary purposes was to ensure adequate protection of workers, the general public, and the environment from harmful radiation exposure; to establish mechanisms for effective coordination among the various Federal agencies involved in radiation protection activities; and to develop a coordinated radiation research program. The bill would have created two Federal interagency groups: the Federal Council on Radiation Protection and the Federal Conference on Research into the Biological Effects of Ionizing Radiation. The first group would have been chaired by the Administrator of the Environmental Protection Agency who would have coordinated Federal regulation of radiation. The second group would have been chaired by the Director of the National Institutes of Health and would have overseen Federal involvement into the biological and health effecs of ionizing radiation. Both groups would have had two Presidentially-appointed public members. The two groups would have been functionally interactive.

S. 2284, the Federal Radiation Protection Management Act, was introduced by Senator Glenn on March 25, 1982. This bill would have established a Federal Council on Radiation Protection composed of the Secretaries of Defense, Energy, Health and Human Service (HHS), Labor, Transportation, Agriculture, Commerce, and Housing and Urban Development, as well as the Administrator of the Environmental Protection Agency, the Chairman of the Nuclear Regulatory Commission, the Director of the Federal Emergency Management Agency, a representative of the Conference of Radiation Control Program Directors, and two citizens. The Secretary of HHS would have been Chairman of the Council. The Chairman of the Council would have established a working group on the reduction and control of occupational exposure to radiation and a working group on medical radiation. An Advisory Group to the medical radiation working group would have been established. The bill would have transferred to the Radiation Protection Council radiation-related authorities granted to the Environmental Protection Agency. Finally, the bill would have established a Federal research conference on research into the biological effects of radiation.

S. 525, the Radiation Reorganization Act of 1985, was introduced by Senator Glenn on February 27, 1985, in an effort to reorganize the Federal radiation research and regulatory establishment. S. 525 and its companion House bill (H.R. 1287) would have transferred to the Secretary of HHS the authority of the Secretary of Energy to conduct epidemiological studies of the effects of radiation. The Secretary of HHS would have exercised authority to conduct studies of the health effects of radiation in places of employment through the Director of the Centers for Disease Control. The bill would have directly transferred personnel, records, obligations, commitments, and unexpended appropriations from the Department of Energy to the Department of Health and Human Services. S. 525 would also have established an Advisory Council consisting of seven members appointed by the Secretary of HHS. Members would be individuals who were expert in the conduct of epidemiology studies of the health effects of radiation, individuals who represented public interest groups concerned about the health effects of radiation, and public health officials who deal with radiation health effects.

Title IV of S. 1085 would create a Radiation Study Advisory Board. The Committee heard testimony at its June 17, 1987 hearing on the need for this Title of the legislation.

VI. HEARINGS

The Committee on Governmental Affairs held four days of hearings on the need for independent, outside oversight of safety and health at nuclear facilities and other legislation addressing safety and health issues at these facilities. The following individuals provided testimony:

MARCH 13, 1987—REACTOR SAFETY ISSUES AT DEPARTMENT OF ENERGY FACILITIES

J. Dexter Peach, Assistant Comptroller General, U.S. General Accounting Office.

Louis H. Roddis, Jr., Consulting Engineer.

Keith O. Fultz, Associate Director, U.S. General Accounting Office.

Dr. Forrest J. Remick, Vice Chairman, Advisory Committee on Reactor Safeguards, U.S. Nuclear Regulatory Commission.

Mary L. Walker, Assistant Secretary for Environment, Safety and Public Health, U.S. Department of Energy.

MARCH 17, 1987—ENVIRONMENTAL ISSUES AT DEPARTMENT OF ENERGY NUCLEAR FACILITIES

Keith O. Fultz, Associate Director, U.S. General Accounting Office.

Anthony J. Celebrezze, Jr., Attorney General, State of Ohio.

Roger Stanley, Hanford Project Manager, State of Washington Department of Ecology.

Lewis Bedenbaugh, Director, Division of Facility Compliance, Bureau of Solid and Hazardous Wastes, South Carolina Department of Health and Environmental Control.

Dr. J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response, U.S. Environmental Protection Agency.

Mary L. Walker, Assistant Secretary for Environment, Safety and Public Health, U.S. Department of Energy.

JUNE 16, 1987—S. 1085, THE NUCLEAR PROTECTIONS AND SAFETY ACT OF 1987

Senator Brock Adams, State of Washington.

Representative Norman D. Dicks, State of Washington.

J. Dexter Peach, Assistant Comptroller General, U.S. General Accounting Office.

Dr. John Ahearne, Vice President, Resources for the Future, Inc.

Dan W. Reicker, Attorney, Natural Resources Defense Council.

J. Winston Porter, Assistant Administrator, Solid Waste and Emergency Response, U.S. Environmental Protection Agency.

JUNE 17, 1987—S. 1085, THE NUCLEAR PROTECTIONS AND SAFETY ACT OF 1987

Joseph F. Salgado, Under Secretary, U.S. Department of Energy.

Joseph M. Misbrener, President, Oil, Chemical, and Atomic Workers International Union.

James D. Kelly, President, Local 8031, United Steelworkers of America.

A. L. O'Connor, President, District 34, International Association of Machinists and Aerospace Workers.

Donald Elisburg, Counsel, Industrial Union Department, AFL-CIO.

Dr. Philip Landrigan, Director, Division of Environmental and Occupational Medicine, Mount Sinai School of Medicine.

Dr. James Melius, Medical Consultant, Division of Environmental Health Assessment, New York State Department of Health.

Frank White, Deputy Assistant Secretary, Occupational Safety and Health Administration, U.S. Department of Labor.

Dr. Edward Baker, Acting Deputy Director, National Institute of Occupational Safety and Health, U.S. Department of Health and Human Services.

VII. TABULATION OF VOTES

The Committee met on August 4, 1987, to consider S. 1085. Senator Glenn offered an amendment in the nature of a substitute for the bill.

The Committee considered the amendment in the nature of a substitute offered by Senator Glenn and adopted it on a voice vote. Senators Bingaman and Mitchell requested to be recorded in opposition to the Glenn substitute amendment.

Senator Roth offered two amendments. One proposed a sunset provision for the independent safety board at the end of the six-year period of authorized appropriations in 1993. The other amendment proposed placing a personnel ceiling of 100 full-time employees (FTE) for the number of individuals who can be employed by the independent safety board. These two amendments were discussed by the Committee and adopted by a voice vote.

Senator Heinz offered an amendment that proposed that the independent safety board investigate those aspects of the transportation of nuclear materials to and from DOE nuclear facilities which the board determines to be significant because of possible adverse effects on the health or safety of the public. This amendment was discussed by the Committee and adopted by a voice vote.

A quorum being present, the Committee agreed to report favorably S. 1085, as amended, by voice vote.

VIII. SECTION-BY-SECTION ANALYSIS

Short Title

The opening section states the title of this bill as the "Nuclear Protections and Safety Act of 1987".

Title I

Section 101 states that this title may be cited as the "Department of Energy Nuclear Safety Board Oversight Act of 1987".

Section 102 states the Congressional findings and purpose for the establishment of a Department of Energy Nuclear Safety Board ("Board"). The Board will review the content and application of health and safety standards and recommend improvements in the standards which govern Department of Energy (DOE) facilities. The Board will also review all "events," which include nuclear accidents and accident precursors at DOE nuclear facilities, and make recommendations to prevent such occurrences. An event includes the criteria set forth in *section 103 subsection (g)(2)(D),* and "nuclear facility" is defined in *section 103 subsection (j).* The Board will be a new and independent agency, with no operational responsibilities for DOE nuclear facilities and no statutory responsibility of any kind for the commercial nuclear industry. The Board will inform the Congress of its findings and recommendations.

Section 103 of the bill amends Title II of the Energy Reorganization Act of 1974 (42 U.S.C. 5841 et seq.) by adding a new section 212, which creates the Board, composed of three members appointed by the President with the advice and consent of the Senate. The Board members are required to be experts in the field of nuclear

safety, who will serve staggered six-year terms of office to ensure continuity. Board members will be expected to sever any significant financial relationships with DOE and its contractors at the time they assume office. *Subsection (f)* permits the Board to hire staff and consultants, but limits staff to one hundred full-time equivalents.

Section 103 subsection (g) sets forth the Board's six main functions, which can be summarized as follows. First, the Board will ensure that DOE's current health and safety standards are being appropriately implemented *(Subsection (g)(1))*. Second, the Board will recommend changes in the content and application of DOE's standards. Changes recommended pursuant to *Subsection (g)(1)* are advisory, not mandatory. Third, the Board will investigate those events at the DOE facilities which the Board determines to be important because of their actual or potential adverse effect on the public's health or safety *(Subsection (g)(2)(A)(i))*. The Board shall also investigate aspects of transporting nuclear materials to and from DOE facilities. Subsection (g)(2)(A)(ii). Fourth, the Board will recommend specific measures designed to minimize the likelihood of such events occurring. These recommendations must be administratively responded to in specific ways *(Subsection (g)(6)(A))*. Fifth, the Board shall issue periodic unclassified public reports setting forth its recommendations, as well as the decision to implement corrective steps at DOE facilities *(Subsection (g)(8))*. Finally, the Board shall be consulted and make recommendations to ensure that the design, construction, and health and safety standards of all new DOE facilities are appropriate, and that these standards are commensurate with standards that are imposed on comparable private sector facilities *(Subsection (g)(9))*.

A more complete description of these functions follows:

Section 103 Subsection (g)(1)(A) delineates the Board's responsibilities with regard to the existing DOE health and safety standards. First, the Board will ensure that existing standards, the DOE orders, are being adequately implemented. Second, as its experience with those standards grows, the Board will recommend necessary changes in those orders. These recommendations will be advisory in nature. *Subsection (g)(1)(B)* requires that the DOE Secretary respond to the Board's recommendations made pursuant to *subsection (g)(1)(A)* and notify the Board and Congress as to which recommendations will be implemented, and if the Secretary's decision is not to implement the recommendations, to give the reasons for this decision. [Note: Other Board recommendations will require more specific responses. *See subsections (g)(6) and (h)].*

Section 103 Subsection (g)(2)(A)(i) states that the Board shall investigate events at DOE nuclear facilities which the Board determines are important because of their actual or potential adverse effect on the health or safety of the public. Events are defined in *subsection (g)(2)(D)* to include actions or failures to act, including operational failures, which the Board determines to have an actual or potentially adverse effect on public health and safety. *Subsections (g)(2)(A)(ii)* and *(g)(2)(C)* set forth the Board's authority to investigate the transportation of nuclear materials to and from DOE facilities.

This legislation, including *subsection (g)*, does not alter or diminish the Secretary of Energy's sole and ultimate responsibility for preventing events from occurring at DOE facilities.

The Board has a broad range of information-gathering powers to assist it in evaluating events, and in carrying out all its purposes under this Title. *Subsection (g)(2)(A)(iii)* states that the Board may request the DOE Secretary to make an investigation of any subject related to the Board's purpose, including events, and report facts and findings to the Board. That section and the related provisions in *subsections (g)(3)* (analysis of operational data) *(g)(4)* (DOE special studies), and *(g)(7)* (the establishment of reporting requirements), collectively allow the Board to obtain the expert knowledge and advice of DOE, particularly the Environment, Safety, and Health (ES&H) employees at DOE. This will result in the Board making the best use of the existing health and safety expertise concerning DOE facilities and reduce the need to expand the Board's staff.

Section 103 Subsection (g)(5) enables the scientific and industrial communities, as well as members of the public, to provide the Board with their insights concerning DOE safety standards, research, and actual or potential events at these facilities. Public input of this type is a vital source of information and a constructive vehicle for presenting community concerns regarding DOE facilities.

Section 103 Subsection (g)(8) provides for the Board to issue periodic unclassified public reports. These should summarize Board actions and recommendations.

Section 103 Subsection (g)(9) requires that the Board be consulted and be able to make recommendations to ensure that all new DOE nuclear facilities conform to appropriate design, construction, and health and safety standards. These standards should be commensurate with any standards that are imposed on comparable private sector facilities. For example, all new DOE reactors should meet existing NRC standards for comparable nuclear facilities. The intent is to impose licensing standards whenever such standards exist or can be inferred. This section is designed to encourage the upgrading of DOE facilities to meet higher health and safety standards than currently exist, and for new facilities to meet standards that a licensing process responsibly could be expected to require.

Section 103 Subsection (g)(6) requires the right of the Board to recommend specific measures designed to substantially reduce the likelihood of actual or potential adverse events impairing public health and safety. The recommendations under *subsection (g)(6)(A)* are, therefore, considered so important that the Secretary is required to specifically respond within ninety days and implement the recommendation unless it falls within the exception and exemption provisions specifically listed in *section 103 subsection (h)*.

In making its recommendations the Board is directed to consider technical and economic feasibility. This is not a cost-benefit analysis formula. The Board's recommendations to substantially reduce the likelihood that events will occur at any DOE nuclear facilities should not be restricted by cost. Technical feasibility requires that the Board's recommendation be capable of implementation using generally accepted scientific and engineering principles. Addressing economic feasibility means that in seeking to reduce risks, the

Board should compare the costs of alternative approaches so as to structure any recommendation in an economic manner. For example, the Board may determine that it will cost five hundred million dollars ($500,000,000) to reduce substantially the likelihood of a nuclear event at a twenty-year-old DOE production reactor, which has an expected useful life of twenty-three to twenty-five years and a replacement value of one billion dollars ($1,000,000,000). Under those circumstances, the Board could indicate what technical and engineering improvements would be needed to repair the existing facility so that it could achieve acceptable standards for continued operation, but recommend closing such an old facility and accelerating the planning and construction of a new, replacement facility as a more economic use of federal dollars.

Once a recommendation is made by the Board pursuant to *subsection (g)(6)*, the Secretary, or in certain instances the President, can respond in five different ways (or in a combination thereof) as governed by 103(h). The Secretary's five options to Board recommendations made pursuant to *subsection (g)(6)*, and subsequent explanations, are as follows:

First, the Secretary may choose to implement the Board's *subsection (g)(6)* recommendation. It is hoped that most if not all of the Board's recommendations will fall in this category. Second, the Secretary could chose to close the facility, mooting the recommendation. Third, in any case where implementation of the recommendation would create an inability to meet national security requirements, the President may exempt any facility from being in compliance with the Board's recommendation. Fourth, in those instances where the Secretary wishes to implement the Board's recommendations, but lacks the funds to do so, the President must specifically request, but not necessarily obtain, a supplemental appropriation. Fifth, in those instances where the Secretary believes the Board's recommendations are technically or economically infeasible, the Secretary will have the burden of obtaining a Presidential certification in support of the Secretary's initial decision not to implement the Board's recommendation. Each of these alternatives is subject to further explication.

First, it is hoped the Secretary will be able to immediately implement all of the Board's recommendations.

Second, *subsection (h)(1)* states that the Board's recommendations concern operating facilities. Therefore, the Secretary can indicate within ninety days, his or her intention to close such a facility and actually close the facility within one year of the day the recommendation was received.

Third, in those instances where a Board recommendation would lead to the affected facility being closed, or production dramatically reduced, pursuant to *subsection (h)(1)(C)* the President could specifically exempt the facility from complying with the recommendation by determining that it is in the paramount national security interest of the United States to provide such an exemption. This provision is restricted solely to those instances where the security of the nation will be severely threatened by closing the facility, not for budgetary or technical exigencies. *Subsection (h)(2)(A)* specifically requires that the President must annually renew this determination if the Board's recommendation has not been implemented and

the facility continues to operate. Any determination of the need to exempt a DOE nuclear facility from the Board's recommendation should contain those facts and finding which support the exemption.

The Secretary of Energy, acting alone, is not in a position to evaluate effectively the National Security requirements. The Secretary of Energy is the producer, and the Department of Defense the customer whose security requirements must be met. The legislation allows maximum flexibility to the President and his respective Cabinet officers on this issue. Therefore, the President could with the Secretary of Defense, and Secretary of Energy establish procedures to allow appropriate Executive Branch consultations concerning the national security implications, if any, of Board recommendations. For example, the President, with the advice of the Secretary of Defense, may choose to amend stockpile production targets rather than keep a facility open that the Board finds to be dangerous. On the other hand, the stockpile needs may be so pressing that production cannot be reduced, and, therefore, the Board's recommendation cannot be implemented.

Fourth, the Secretary may wish to implement a recommendation but be unable to devote sufficient existing funds to accomplish this. In such instances the Secretary should indicate his intention to implement the recommendation and follow-up by complying with *subsection (h)(2)(B)(ii),* which requires the facility to close unless the President specifically requests the necessary funds to implement the recommendation as part of the budget process within twelve months of the recommendation being issued. This may pose significant difficulties in light of our current budgetary process. It may, therefore, be necessary for a contingency fund to be made available for those recommendations.

Fifth, *subsection (g)(6)(A)* directs the Board in making recommendations to consider technical and economic feasibility. This standard does not require the Board to make formal findings concerning economic or technical feasibility. It is further recognized that the Board's recommendations will never be subject to scientific or economic certainties or be without controversy. Inevitably there will be instances where the Secretary believes the Board has not properly evaluated the data and reached correct conclusions concerning the safety of DOE's facilities. In those instances where the Secretary believes the Board's recommendation addresses a non-existent or extremely remote technical possiblity, and implementing the changes will be extremely burdensome, the Secretary may disagree with the Board by utilizing *subsections (h)(1)(A)* and *(h)(2)(B)(i).* The burden of demonstrating that a recommendation is not technically or economically feasible rests with the Secretary. If the Secretary disagrees with the Board's recommendation on these grounds, *subsection (h)(2)(B)(i)* requires the Secretary to report the disagreement with the Board to Congress and the President, along with the reasons for the Secretary's decision.

Pursuant to *subsection (h)(2)(B)(i)(I),* within sixty days of the Secretary's decision not to implement the Board's recommendation, the President may overrule the Secretary's decision and require that the Board's recommendation be implemented. On the other hand, pursuant to *subsection (h)(2)(B)(i)(II),* the President may

choose to affirm the Secretary's decision not to implement the Board's recommendation and supply the specific facts and findings which support this decision. Thus, even where the Board and Secretary disagree, a final decision on the matter would be reached within 150 days.

Normally, the Board will not require legal processes to obtain information necessary to its evaluations. However, *section 103 subsection (i)* provides the Board with the necessary powers to conduct hearings, including subpoena power to obtain witness testimony. Contumacy of Board process will be enforced in the appropriate United States federal district courts. These procedures will only be necessary should the DOE Secretary choose not to cooperate informally with the Board. These powers may also be necessary in investigations of events, where liability questions can be expected to limit DOE or contractor cooperation with the Board. It is not expected that the Board will normally conduct its business in such a formal, quasi-adjudicatory manner.

Section 103 subsection (j) sets forth the definition of the term "nuclear facility", which includes all DOE production and utilization facilities but excludes naval nuclear reactors governed by Executive Order 12344.

Section 103 subsection (k) provides an initial period of six years for the Board to operate. The Board shall be terminated if its authority is not renewed prior to the end of that period. To assist Congress in assessing the Board's utility, *subsection (m)* requires that the Board report to the Congress concerning its activities and recommendation for continuation, termination, or modification of the Board's functions and programs.

Section 103 subsection (l) authorizes the sum of five million dollars ($5,000,000) annually for the Board's first six years of operations. Due to the provisions previously discussed *(See* e.g. *Section 103 subsections (g)(2)(A)(ii), (g)(3), (g)(4), (g)(5)* and *(g)(7),* it is anticipated that the Board's staff and expenses can be limited in number. *(Section 103 subsection (f)* limits the Board to one hundred, full-time-equivalent staff personnel.)

Section 104(a) amends section 29 of the Atomic Energy Act of 1954 and provides for the Board to receive the assistance of the Nuclear Regulatory Commission's (NRC) Advisory Committee on Reactor Safeguards (ACRS). This section would empower ACRS to expand by as many as five additional members and related support staff. *Subsection 104(b)* would amend Public Law 95–91, and permit, but not require, the Director of the Naval Nuclear Propulsion Program to provide assistance to the Board from time to time. *Section 105* would authorize a one-time comparison study of NRC regulations and DOE orders, with an emphasis on formulating recommendations for improvement in DOE standards.

Title II

Title II would establish the applicability of the Occupational Safety and Health Act of 1970 (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) to the same set of Department of Energy nuclear facilities covered by Title I.

Section 201 states the Congressional findings and purpose for repealing the current OSHA exemption of DOE facilities in *section 4(b)(1)* of the Occupational Safety and Health Act of 1970 (OSHA).

Section 202 preserves the current exemption in *Section 4(b)(1)* of the OSHA Act, except for those facilities described in new *subsection (B)* which provides for OSHA coverage at DOE production and utilization facilities. (Note: These are the same facilities covered by Title I).

Section 202 subsection (b)(1) specifically maintains all existing occupational safety and health standards currently in place at DOE facilities until the Secretary of Labor provides superseding OSHA standards. *Section 202 subsection (2)(B)* indicates that the Secretary of Labor's regulations shall include provisions for safeguarding DOE information; mechanisms and processes for enforcement, including the right of entry for unannounced inspections without probable cause; provisions for the receipt of complaints from individuals, and protection of the complainants from retribution. It should be noted that DOE personnel who perform OSHA-type inspections and DOE personnel who perform radiological OSHA-type inspections will not be transferred or reassigned.

Subsection (2)(B)(iv) also makes it clear that OSHA will ensure that the DOE facilities covered by this title will be inspected at least once a year. (Such a schedule is significantly less demanding that that utilized for the post-Bhopal chemical industry).

Section 203 would specifically amend *section 22* of the OSHA Act and require the Director of NIOSH to perform all his functions, as required, at DOE nuclear facilities.

Section 204 provides for OSHA and NIOSH to receive the Secretary of Energy's assistance in carrying out their duties under this title. OSHA and NIOSH will adopt safeguards to prevent unauthorized release of information provided by the Secretary of Energy.

Title III

Title III would resolve the application of Resource Conservation and Recovery Act (RCRA). 42 U.S.C. *section 6901* et. seq., to DOE facilities. Essentially, it clarifies Congress' intent that RCRA applies to hazardous wastes, even when those wastes are contained in a mixture or combination of a hazardous waste (regulated under RCRA) and a radioactive material (subject to the Atomic Energy Act (AEA)).

Section 301 states that Title III may be cited as the "Mixed Hazardous Waste Amendment Act of 1987." For purposes of this title, "mixed hazardous waste" refers to a hazardous waste as defined under RCRA and associated regulations in a mixture or combination with a radioactive material subject to the Atomic Energy Act.

In *Section 302(1)* Congress recognizes the significant dangers to health, safety, and the environment posed by the generation, transportation, treatment, storage, and disposal of mixed wastes unless carefully planned and managed. In *section 302(2)*, Congress finds that DOE's facilities governed under the Atomic Energy Act produce mixed wastes. In *section 302(3)*, Congress finds that the authority of the Environmental Protection Agency (EPA) and states to regulate the hazardous waste component of mixed wastes at

DOE facilities needs to be clarified in view of the continuing controversy over the applicability of RCRA to such wastes. "Authorized states," as referred to in *section 302,* means states granted authority by EPA to carry out a federal RCRA program.

Section 303 clarifies Congress' intent that the Solid Waste Disposal Act (SWDA), 42 U.S.C. *section 3251* et seq., as amended by RCRA, applies to mixtures to solid wastes, as defined under RCRA, when these wastes are mixed with radioactive materials which are generated, transported, treated, stored, or disposed of at Department of Energy facilities governed under the Atomic Energy Act, including facilities not licensed by the Nuclear Regulatory Commission or delegated states for the disposal of radioactive materials.

Section 304 is the operative section of Title III. It clarifies that the solid waste component of such wastes, when mixed with certain radioactive materials as defined in the Atomic Energy Act, are subject to applicable requirements under the SWDA, as amended by RCRA. Specifically, *section 304* amends the current definition of "solid waste" under *section 1004(27)* of RCRA (42 U.S.C. *section 6903(27)).* This definition is important because "hazardous waste," as defined under RCRA *section 1004(5),* is a subset of "solid waste" as defined in *section 1004(27).* In other words, in order to be regulated under RCRA as a hazardous waste, a material must first meet the definition of "solid waste."

Currently, the term "solid waste" under RCRA expressly excludes radioactive materials governed under the Atomic Energy Act, that is, "source, special nuclear and byproduct materials." [42 U.S.C. section 2024(e), (z), (aa)] Title III would retain this exclusion in *section 1004(27)* for the radioactive materials that are part of a mixture or combination, while the other constituent part of such mixture or combination is a "solid waste" as defined in RCRA *section 1004(27).* If this mixture or combination, despite its radioactivity, meets RCRA's definition of hazardous waste, the solid waste component of that mixture would be subject to RCRA hazardous waste regulation.

Title III also clarifies that the term "solid waste" does not include mixed wastes at the time they are transported to and emplaced in a repository, as that term is defined in the Nuclear Waste Policy Act (NWPA), *42 U.S.C. Section 10101(18).* This provision is intended to exclude from RCRA regulation the transport of nuclear waste and its subsequent emplacement in a geologic repository developed pursuant to the NWPA. Moreover, if such wastes are disposed of in any palce other than in a repository, developed pursuant to the NWPA, such solid wastes remain subject to RCRA.

Section 305(a)(1) and *(2)(B)* are self-explanatory. *Section 305(a)(2)(A)* provides that Title III shall not be construed as altering Congress' intent that the SWDA, as in effect prior to these amendments, applies to the solid waste component of mixed wastes produced by the commercial nuclear industry. EPA and the Nuclear Regulatory Commission have been working to develop a system for joint regulation of commercial mixed wastes under RCRA and the AEA.

Section 401 states that this title may be cited as the "Radiation Study Advisory Board Act of 1987."

Section 402 states the Congressional findings and purpose for the establishment of a federal advisory committee, the Radiation Research Board ("Board"), under the leadership of the Secretary of Health and Human Services to assist the Secretary of Energy in conducting studies of the effects of radiation. This assistance is important because public health and occupational health specialists at other departments can assist the scope and quality of government research funded by DOE.

Section 403(a) provides for the Board's membership. It shall consist of eight members appointed by the Secretary of Health and Human Services (HHS), one member appointed by the Secretary of Energy, and two members appointed by the Secretary of Labor. The Secretary of HHS is required to appoint individuals who are expert in the health effects of radiation or epidemiology, or toxicology, and public health officials who are concerned with such issues, and to consult with particular experts in his Department in this process.

Section 403(b) provides for the Board to review all proposals for health effects studies funded by the Secretary of Energy at levels equal to or exceeding two-hundred-fifty thousand dollars ($250,000). The Board will send recommendations for modification or deletion of proposals to the Secretary of Energy. The Secretary of Energy is required to periodically report to the Congress concerning implementation of the Board's recommendations and is required to provide specific reasons for each decision not to implement the Board's recommendations.

Subsection (b)(4) requires the Board to annually review the studies conducted pursuant to this title, and advise the Secretary of Energy on the direction of future research. To improve the research conducted, *subsection (b)(5)* provides for researchers not associated with DOE to review data and for peer review of the research. It is anticipated that the Board will not result in any increased costs to the government, in as much as its work is not expected to be time consuming and suitable experts are already employed by the Secretary of Health and Human Services, Labor, Energy, and in other governmental departments.

IX. COST ESTIMATE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, June 29, 1987.

Hon. JOHN GLENN,
Chairman, Committee on Governmental Affairs,
U.S. Senate, Washington, DC.

DEAR CHAIRMAN: As you requested, the Congressional Budget Office has reviewed S. 1085, the Nuclear Protection and Safety Act of 1987, as introduced April 21, 1987. CBO estimates that implementation of this bill would result in additional outlays of between $12 million and $18 million in fiscal year 1988, assuming appropriation of the necessary amounts. We estimate that implementation of S. 1085 would cost between $70 million and $200 million over the 1988–1992 period. The estimated costs vary because they depend largely on the level of enforcement activities undertaken by

the Department of Labor (DOL), and the extent its resources would expand to accommodate an increased workload. In addition, the increased oversight of Department of Energy (DOE) nuclear facilities may necessitate additional DOE expenditures to correct safety and environmental problems; however, there is no basis for estimating such costs, because there is no way to predict what the required corrections would be or how many of them would be made under current law.

Bill Purpose

S. 1085 creates an independent board to oversee the safe operation of DOE nuclear facilities, it applies the provisions of the Occupational Safety and Health Act (OSHA) to certain DOE nuclear facilities, clarifies the jurisdiction of the Environmental Protection Agency (EPA) regarding nuclear waste at DOE facilities, and establishes a board to evaluate DOE epidemiological studies of the health effects of radiation.

Title I establishes a three-member Independent Department of Energy Nuclear Safety Board to be appointed by the President. This board is to promote safety at DOE nuclear facilities by conducting annual evaluations of facilities, reviewing all orders governing DOE nuclear facilities, and recommending improvements in facility operating procedures and DOE health and safety standards. S. 1085 requires the Secretary of Energy to implement each recommendation of the board unless the Secretary determines the recommendation is technically infeasible, or the President exempts a facility from implementing the board's recommendations. The bill authorizes $5 million annually for the 1988–1993 period to conduct the board's activities. In addition, the DOE and other agencies are to provide assistance to the board when requested.

Title II amends the OSHA to cover DOE nuclear facilities, and directs the Secretary of Labor to promulgate regulations to govern the application of OSHA to these facilities.

Title III adds an amendment to the Solid Waste Disposal Act to clarify the intent of the Congress that solid waste mixed with radioactive material at DOE facilities is subject to the Solid Waste Act.

Title IV establishes an eight-member Radiation Research Review Board to review DOE proposals for funding epidemiological studies of the health effects of radiation. The Research Review Board is to recommend whether or not DOE should fund these studies, and advises DOE on the suggested scope and direction of future radiation health studies needed.

Federal Budget Impact

CBO estimates that the implementation of Title I in fiscal year 1988 would cost approximately $12 million. This estimate includes: $5 million that the bill authorizes for the Independent Safety Board; an estimated $1.2 million to expand the Nuclear Regulatory Commission's Advisory Committee on Reactor Safeguards; an estimated $0.5 million for the National Academy of Sciences to study the differences between Nuclear Regulatory Commission (NRC) regulations and DOE orders governing nuclear facilities; and an es-

timated $5 million for the DOE to respond to the board's requests for information and assistance.

As discussed above, Title I directs the Secretary of Energy to implement the recommendations of the board unless they are technically infeasible, or exempted by the President. DOE is currently conducting environmental audits and safety appraisals at its nuclear facilities to establish the baseline data necessary to determine what problems exist at these facilities and how to correct them. Based on preliminary information from DOE, it appears that correcting existing problems at DOE may cost $30 billion to $40 billion. However, CBO cannot predict the effect of S. 1085 on the cost of correcting existing environmental and safety problems at DOE facilities, because these costs may also be incurred under current law. Thus, it is uncertain what amount, if any, of these projected future remedial costs can be directly attributed to S. 1085.

We estimate the cost of applying the OSHA to DOE nuclear facilities (Title II of S. 1085) to be $2 million to $8 million in 1988. Based on information from DOL, CBO estimates that $2 million would be required in 1988 to conduct complaint and accident investigations at DOE facilities, and to promulgate OSHA regulations for DOE facilities. This would be the minimum possible effort to meet the requirements of the bill. On the other hand, the bill could be viewed as requiring DOL to initiate a special emphasis program for DOE nuclear facilities. Based on information from DOL, we believe that such a program would involve hiring an additional 700 inspection and support personnel to conduct annual radiological and non-radiological inspections of the DOE facilities at an annual cost of about $55 million. CBO assumes that an increase in OSHA application efforts of this magnitude and complexity would take roughly five years to implement. We estimate additional outlays in 1988 of about $8 million to begin hiring and training additional staff to conduct a special emphasis program with annual inspections at DOE nuclear facilities. Outlays would increase gradually to about $50 million in 1992. The scope of DOL's implementation effort would be determined by the amount of appropriations provided.

Title II also contains an amendment to OSHA to clarify the intent of the Congress that the National Institute for Occupational Safety and Health (NIOSH) shall perform functions authorized by OSHA at DOE nuclear facilities. NIOSH expects that this clarification will result in an increase in the number of health hazard complaints from individuals and labor unions at DOE nuclear facilities. Based on information from NIOSH, CBO estimates that the additional costs of investigating such complaints would not be significant.

Under current law, EPA has concurrent jurisdiction with DOE over mixed radioactive and hazardous wastes at DOE facilities. Title III of this bill clarifies EPA's authority in this situation, and CBO estimates that this title would not result in significant additional outlays.

CBO estimates that the Radiation Research Review Board established by Title IV of this bill would not require significant additional expense, because the intent is that this board would be a part-time advisory group composed of current government employees.

The costs of this bill fall within budget functions 250, 270, and 550. For the purpose of this estimate, CBO assumed that the bill would be enacted by October 1, 1987, and that amounts authorized by the bill will be appropriated.

If you wish further details on this estimate, we will be pleased to provide them.

With best wishes,

Sincerely,

JAMES BLUM
(For Edward M. Gramlich, Acting Director).

X. REGULATORY IMPACT OF THE LEGISLATION

In accordance with paragraph 11(b) of Rule XXVI of the Standing Rules of the Senate, the following statement of the regulatory impact of S. 1085 is made.

Title I creates a DOE Nuclear Safety Board which could recommend changes in the existing Orders which apply to the government-owned production and utilization facilities operated by DOE. Aside from this ability to recommend changes, Title I will entail no significant additional regulation of any individuals or businesses. No new regulations will be promulgated except those governing the Board's procedures, and no new information requirements will be made on the public. There will be no additional paperwork requirements resulting from enactment.

Title II would extend OSHA and NIOSH coverage to DOE production and utilization facilities previously exempted. This title does provide the Secretary of Labor with the authority to promulgate regulations governing the application of the OSHA Act to the Department of Energy's production and utilization facilities. However, inasmuch as these DOL regulations will merely supersede existing DOE regulations, and these facilities are government-owned facilities, Title II will entail no significant additional regulation of any individuals or businesses. There will be no additional paperwork requirements resulting from enactment.

Title III clarifies the current ability of the EPA to regulate the hazardous waste component of a mixture or combination of a hazardous waste and radioactive materials. Inasmuch as Title III merely codifies the existing regulatory scheme, Title III will entail no significant additional regulation of any individuals or businesses. However, new regulations may be promulgated based on EPA's existing authority to regulate these types of hazardous waste. No new information requirements will be made on the public based upon Title III. There will be no additional paperwork requirements resulting from the enactment.

Title IV creates a federal advisory board to assist the Secretary of Energy in conducting studies of the effects of radiation. Title IV will entail no significant regulation of any individuals or businesses.

No new regulations will be promulgated, and no new information requirements will be made on the public. There will be no additional paperwork requirements resulting from the enactment.

XI. CHANGES IN EXISTING LAWS

In compliance with paragraph 12 of Rule XXVI of the Standing Rules of the Senate, changes in existing law made by S. 1085, as reported are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which, existing law in which no change is proposed is shown in roman):

ENERGY REORGANIZATION ACT OF 1974

* * * * * * *

INDEPENDENT NUCLEAR SAFETY BOARD

SEC. 212. (a) There is established a Department of Energy Nuclear Safety Board (hereafter in this section referred to as the "Board").

(b)(1) The Board shall be composed of 3 members appointed by the President, by and with the advice and consent of the Senate, from among respected experts in the field of nuclear safety with a demonstrated competence and knowledge relevant to the independent investigative and prescriptive functions of the Board. No more than 2 members of the Board shall be of the same political party. Not later than 90 days after the date of the enactment of this section, the President shall submit such nominations for appointment to the Board.

(2) Any vacancy in the membership of the Board shall be filled in the same manner in which the original appointment was made.

(3) During their tenure on the Board, no member of the Board shall have any significant financial relationship with the Department of Energy or with any firm, company, corporation, or other entity engaged in activities under contract with the Department of Energy.

(c)(1) The Chairman and Vice Chairman of the Board shall be designated by the President. The Chairman and Vice Chairman and other Board members may be reappointed to such offices.

(2) The Chairman shall be the chief executive officer of the Board and shall, subject to such policies as the Board may establish, exercise the functions of the Board with respect to—

(A) the appointment and supervision of personnel employed by the Board;

(B) the organization of any administrative units established by the Board; and

(C) the use and expenditure of funds.

The Chairman may delegate any of the functions under this paragraph to any other member or to any appropriate employee or officer of the Board.

(3) The Vice Chairman shall act as Chairman in the event of the absence or incapacity of the Chairman or in case of a vacancy in the office of Chairman.

(d)(1) Except as provided under paragraph (2), the members of the Board shall serve for terms of 6 years. Members of the Board may be reappointed.

(2) Of the members first appointed—

(A) one shall be appointed for a term of 2 years;

(B) one shall be appointed for a term of 4 years; and

(C) one shall be appointed for a term of 6 years,

as designated by the President at the time of appointment.

(3) Any member appointed to fill a vacancy occurring before the expiration of the term of office for which such member's predecessor was appointed shall be appointed only for the remainder of such term. A member may serve after the expiration of the member's term until a successor has taken office.

(4) Any member of the Board may be removed by the President for inefficiency, neglect of duty, or malfeasance in office.

(e) Two members of the Board shall constitute a quorum for issuing reports, but a lesser number may hold hearings.

(f) The Board shall hire such staff and make such expenditures for consultants and services as are necessary. Staff for the Board may not exceed 100 full-time equivalent staff personnel.

(g) The Board shall have the following functions:

(1)(A) The Board shall review and evaluate the implementation of the health and safety standards of the Department of Energy, including all applicable Department of Energy Orders, at each Department of Energy nuclear facility. The Board shall review and assess the content and application of all Orders governing Department of Energy nuclear facilities, recommend necessary changes in the content and application of such Orders, and recommend areas needing additional research.

(B) The Secretary shall—

(i) respond to the recommendations made by the Board pursuant to subparagraph (A); and

(ii) notify the Board and Congress as to which recommendation will be implemented and which will not be implemented and shall include in such notification the reasons for not implementing such recommendations.

(2)(A)(i) The Board shall investigate any event at a Department of Energy nuclear facility which the Board determines to be important because of an actual or potential adverse effect on the health or safety of the public.

(ii) The Board shall investigate those aspects of the transportation of nuclear materials to and from Department of Energy nuclear facilities which the Board determines to be significant because of possible adverse effects on the health and safety of the public.

(iii) The Board may request the Secretary of Energy (hereafter in this section referred to as the "Secretary") to make an investigation of any subject related to the Board's purposes, including any matter described in subdivision (i) or (ii), and to report its findings to the Board in a timely fashion. The Board may analyze the findings of the Secretary for the purpose of making its own conclusions and recommendations.

(B) The purpose of any Board investigation under subparagraph (A)(i) shall be—

(i) to determine if the Secretary is adequately implementing the health and safety standards of the Department of Energy, including all applicable Department of Energy Orders, at Department of Energy nuclear facilities;

(ii) to ascertain information concerning the circumstances of any event, and its implications for the public health and safety;

(iii) to determine whether such event is part of a pattern of similar events at other Department of Energy nuclear facilities which could adversely affect the public health or safety or which could be the precursor of events which could adversely affect the public health or safety; and

(iv) to provide such recommendations to the Secretary for changes in Department of Energy Orders, safety regulations and requirements, including research needs, and other regulatory policy as may be prudent or necessary.

(C) The purpose of any Board investigation under subparagraph (A)(ii) shall be to review—

(i) the transportation packages used to contain nuclear materials in transit;

(ii) the adequacy of design standards for packages, and testing of the packages;

(iii) the safety of rail routes and highway routes chosen;

(iv) the availability of safer routes around high-density population centers; and

(v) the ability of public safety officials to respond to an emergency.

(D) For the purpose of this paragraph, the term 'event' shall include an action or failure to act by any person, including the Secretary, or a continuing series of actions or failures to act by any person, including the Secretary, including operational failures, that the Board determines to have an actual or potentially adverse effect on public health and safety.

(3) The Board shall have access to and may systematically analyze operational data from any Department of Energy nuclear facility to determine whether there exist certain patterns of events that indicate health and safety problems.

(4) The Board may conduct or request the Secretary to conduct special studies pertaining to safety at any Department of Energy nuclear facility.

(5) The Board may evaluate information received from the scientific and industrial communities, and from the interested public, with respect to—

(A) events with actual or potential adverse effects on health and safety; or

(B) suggestions for specific measures to improve health and safety standards or necessary research at Department of Energy nuclear facilities.

(6)(A) The Board shall recommend to the Secretary those specific measures that should be adopted to substantially reduce the likelihood that events will occur at any Department of Energy nuclear facility. In making its recommendations, the Board shall consider technical and economic feasibility. The Secretary shall respond in writing to the recommendations of the Board within 90 days of receipt of such recommendations. Such written response shall detail specific measures adopted by the Secretary in response to such recommendations.

(B) The recommendations of the Board made pursuant to subparagraph (A) shall also be sent to Congress, and, when possible, an unclassified version shall be made available to the public.

(7)(A) The Board may establish reporting requirements which shall be binding upon the Secretary.

(B) The information which the Board may require to be reported under this paragraph may include any materials designated as classified material pursuant to the Atomic Energy Act of 1954, or any materials designated as safeguards information and protected from disclosure under section 147 of the Atomic Energy Act of 1954.

(C) Notwithstanding any other provision of law, the Secretary and all contractors operating Department of Energy nuclear facilities shall fully cooperate with the Board and provide ready access to such facilities, personnel, and all information necessary to carry out the functions of the Board.

(D) In order to protect information, the Secretary may deny access to information provided to the Board to any person who—

(i) has not been granted an appropriate security clearance or access authorization by the Secretary of Energy; or

(ii) does not need such access in connection with the duties of such person to enforce this paragraph.

(8) The Board shall issue periodic unclassified public reports. These reports may include recommendations of specific measures to reduce the likelihood of occurrence of nuclear events and of corrective steps to enhance or improve safety conditions at Department of Energy nuclear facilities.

(9) Prior to the construction of any new Department of Energy nuclear facility, the Board shall be consulted and pursuant to this Act make such recommendations as are necessary to ensure that the design and construction of such facilities conforms to design, construction, and health and safety standards that would be imposed upon a comparable private sector facility.

(h)(1) Not later than 1 year after the receipt of recommendations issued by the Board pursuant to subsection (g)(6), the Secretary shall implement each recommendation of the Board with respect to each operating Department of Energy nuclear facility covered by the report unless the Secretary notifies the Board and the Congress (and includes specific facts and findings in support) that—

(A) the recommendation cannot be implemented because it is technically or economically infeasible;

(B) the Secretary agrees with the recommendation but appropriated funds are not currently available for the implementation; or

(C) the President specifically exempts the facility from implementing the recommendations by determining it is in the paramount national security interests of the United States to provide such an exemption.

(2)(A) Any exemption granted under paragraph (1)(C) shall be for a period not in excess of 1 year, but additional 1 year exemptions may be granted upon the President's making a new determination. The President shall report each January to the Congress regarding

any exemption granted from the Board's recommendations during the preceding calendar year, together with specific facts and findings in support of granting each such exemption.

(B)(i) If the reason for not implementing the recommendation under paragraph (1) is based, in whole or in part, on subparagraph (A) of such paragraph, the Secretary shall report his decision and basis for not implementing each of the Board's recommendations to the Congress and the President. Within 60 days of the Secretary's report, the President shall—

(I) overrule the Secretary's decision and direct the Secretary to implement the Board's recommendations, or

(II) certify in a report to the Congress the President's affirmation of the Secretary's decision not to implement the Board's recommendations, and include in such certification the specific facts and findings in support of that affirmation.

(ii) If the reason for not implementing the recommendation under paragraph (I) is based, in whole or in part, upon subparagraph (B) of such paragraph, the facility shall be closed unless the President specifically requests the necessary appropriated funds to implement the recommendation.

(i)(1) The Board or, on the authorization of the Board, any member thereof, may, for the purpose of carrying out the provisions of this section, hold such hearings and sit and act at such times and places, and require, by subpena or otherwise, the attendance and testimony of such witnesses and the production of such evidence as the Board or an authorized member may find advisable.

(2)(A) Subpenas may be issued only under the signature of the Chairman or any member of the Board designated by him and shall be served by any person designated by the Chairman or any member. The attendance of witnesses and the production of evidence may be required from any place in the United States at any designated place of hearing in the United States.

(B) Any member of the Board may administer oaths or affirmations to witnesses appearing before the Board.

(C) Any person who willfully neglects or refuses to qualify as a witness, or to testify, or to produce any evidence in obedience to any subpena duly issued under the authority of this paragraph shall be fined not more than $500, or imprisoned for not more than 6 months, or both. Upon certification by the Chairman of the Board of the facts concerning any willful disobedience by any person to the United States Attorney for any judicial district in which the person resides or is found, the United States Attorney may proceed by information for the prosecution of the person for the offense.

(j) For purposes of this section, the term "Department of Energy nuclear facility" means—

(1) a production facility or utilization facility (as defined in section 11 of the Atomic Energy Act of 1954 (42 U.S.C. 2014)) under the control or jurisdiction of the Secretary of Energy;

(2) a facility subject to such Act (42 U.S.C. 2011 et seq.) under the control or jurisdiction of the Secretary; and

(3) a waste storage facility under the control or jurisdiction of the Secretary, other than a facility developed pursuant to the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101 et seq.) and licensed by the Nuclear Regulatory Commission.

The term does not include facilities or activities covered under Executive Order 12344 (42 U.S.C. 7158, note).

(k) The Board shall cease to exist, and the requirements of this section shall terminate, upon the expiration of the 6-year period beginning on the date of the enactment of this section, unless reenacted at the end of that period.

(l) There are hereby authorized to be appropriated for each of the fiscal years 1988, 1989, 1990, 1991, 1992, and 1993 the sum of $5,000,000.

(m) Five years after the date of enactment of the Nuclear Protections and Safety Act of 1987, the Board shall submit to the Congress a report that shall include—

(1) an assessment of the degree to which the overall administration of the Board's activities are beleived to meet the objectives of the Congress in establishing the Board;

(2) recommendations for continuation, termination, or modification of the Board's functions and programs, including recommendations for transition to some other independent oversight arrangement if it is advisable; and

(3) recommendations for appropriate transitional requirements in the event that modifications are recommended.

ATOMIC ENERGY ACT OF 1954 (P.L. 85-256)

* * * * * * *

a. There is established an Advisory Committee on Reactor Safeguards consisting of a maximum of fifteen members appointed by the Commission of terms of four years each. The Committee shall review safety studies and facility license applications referred to it and shall make reports thereon, shall advise the Commission with regard to the hazards of proposed or existing reactor facilities and the adequacy of proposed reactor safety standards, and shall perform such other duties as the Commission may request. One member shall be designated by the Committee as its Chairman. The members of the Committee shall receive a per diem compensation for each day spent in meetings or conferences, or other work of the Committee, and all members shall receive their necessary traveling or other expenses while engaged in the work of the Committee. The provisions of section 2203 of this title shall be applicable to the Committee.

b. (1) The Advisory Committee on Reactor Safeguards shall provide assistance as requested by the Independent Nuclear Safety Board (as established in section 212 of the Energy Reorganizaiton Act of 1974).

(2) To assist the Board, the Advisory Committee on Reactor Safeguards is authorized to expand its membership by up to 5 additional members and corresponding staff to assist the Independent Nuclear Safety Board.

(3) The Secretary of Energy shall fully reimburse the Advisory Committee on Reactor Safeguards for all reasonable costs incurred

in assisting the Board for activities conducted pursuant to this subsection, including the expense of salary and staff in paragraph (2).

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DEPARTMENT OF ENERGY ORGANIZATION ACT (P.L. 95-91)

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SEC. 309 (a) * * *
(b) * * *
(c) The Director of the Naval Nuclear Propulsion Program may from time to time provide assistance and advice to the Board.

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TITLE 5, UNITED STATES CODE

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PART III—EMPLOYEES

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Subpart D—Pay and Allowances

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Subchapter II—Executive Schedule Pay Rates

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§ 5314. Positions at level III.

Level IV of the Executive Schedule applies to the following positions, for which the annual rate of basic pay shall be the rate determined with respect to such level under chapter 11 of title 2, as adjusted by section 5318 of this title:

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MEMBERS, NUCLEAR REGULATORY COMMISSION

MEMBERS, DEPARTMENT OF ENERGY NUCLEAR SAFETY BOARD

* * * * * * *

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, 73 STAT. 688

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SEC. 4. (a) * * *
(b)(1) [Nothing] *(A) Except as provided in subparagraph (B), nothing* in this Act shall apply to working conditions of employees with respect to which other Federal agencies, and State agencies acting under section 274 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2021), exercise statutory authority to prescribe

or enforce standards or regulations affecting occupational safety or health.

(B)(i) Notwithstanding any other provision of this Act, this Act shall apply with respect to employment performed in—

(I) a production facility or utilization facility (as defined in section 11 of the Atomic Energy Act of 1954 (42 U.S.C. 2014)) under the control or jurisdiction of the Secretary of Energy;

(II) a facility subject to such Act (42 U.S.C. 2011 et seq.) under the control or jurisdiction of the Secretary of Energy; and

(III) a waste storage facility under the control of or jurisdiction of the Secretary of Energy.

(ii) This subparagraph shall not apply to a facility or activity covered under Executive Order 12344 (42 U.S.C. 7158 note).

* * * * * * *

SEC. 8. (g) * * *

(h)(1) Except as provided in paragraph (2), the Secretary of Energy and each contractor operating a nuclear facility described in section 4(b)(1) shall—

(A) cooperate with the Secretary of Labor and the Secretary of Health and Human Services in the conduct of an inspection or investigation under this Act at such facility;

(B) grant access to such facility to enable the conduct of such inspection or investigation; and

(C) provide all information that is necessary to conduct such inspection or investigation.

(2) To protect the confidentiality of information, the Secretary of Energy may deny access to any person who—

(A) has not been granted a security clearance or access authorization by the Secretary; or

(B) does not require such access in connection with the duties of such person to enforce this Act.

* * * * * * *

SEC. 22. (f) * * *

(g)(1) Notwithstanding any other provision of this Act, the Director and the Institute shall perform functions authorized by this Act at Department of Energy nuclear facilities described in section 4(b)(1)(B)(i).

(2) The Institute shall conduct hazard evaluations at such facilities, including ionizing radiation evaluations.

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SOLID WASTE DISPOSAL ACT

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SEC. 1004. (26) * * *

(27) *(A).* The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material re-

sulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 1342 of Title 33 [or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 State. 923).].

(B) The term "solid waste" does not include—

(i) source, special nuclear, or by-product materials as defined in section 11 of the Atomic Energy Act of 1954 (42 U.S.C. 2014), unless such materials are a part of any mixture or combination, if the other constituent part of such mixture or combination is a solid waste, within the meaning of subparagraph (A); or

(ii) wastes at the time they are emplaced at a repository, as defined in section 2(18) of the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101(18)).

ADDITIONAL VIEWS OF SENATOR WILLIAM V. ROTH

I support S. 1085 because of my belief that this bill provides a strong foundation for providing independent safety review and oversight of Department of Energy nuclear facilities. The original bill was a good starting point. After four Committee hearings detailing many of the safety and environmental hazards which exist at DOE nuclear facilities, I am convinced that independent outside oversight is needed. We owe it to the American people that government facilities meet high standards of reactor and environmental safety and pose no threat to the American public. I believe the legislation passed by this Committee is a step in that direction.

A critical element of maintaining safe facilities is maintaining a sound system of checks and reviews. The DOE Office of Environmental, Safety, and Health is a strong component of this system. But even as Secretary Herrington has acknowledged, some outside oversight is necessary to ensure the confidence of the American people.

I agreed to co-sponsor S. 1085, as reported, after the Committee adopted the two amendments which I offered. While I agree that independent oversight is needed in this particular instance, I am in general very concerned about unnecessarily creating new government entities and adding to the government bureaucracy.

The first amendment provides a six-year sunset for the Nuclear Safety Board and requires the Board to provide Congress with a report after five years detailing the Board's effectiveness in meeting the objectives established by the Congress.

I proposed this amendment because I felt it important that the Congress be required to review the Board's activities after a certain period, particularly since it is a new entity. This review will enable the Congress to determine the effectiveness of the Board and determine whether any modifications in its structure or mission should be made. The original language contained authorizations for six years, so the Congress would have to reauthorize it after that period. This amendment simply reinforces that and assures that a complete review will be undertaken.

The second amendment I offered places a ceiling of 100 Full Time Equivalent (FTE) staff personnel on the new Board. The Committee agreed that 100 FTE staff personnel would be adequate to meet the needs of the Board. Equally important, according to the hearing record, the Board should make use of other agencies' staff, such as DOE's Environmental, Safety, and Health personnel, for certain projects. In addition, resources such as the National Academy of Sciences may be used to help with Board matters.

The adoption of these amendments helped to meet my concerns about limiting the growth of the federal bureaucracy. The Board has been created to serve a very important function—one that I wholly support.

WILLIAM V. ROTH.

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